Hints on Grape Culture.—VI.

THE plan which we have laid down now brings us to that part of our subject which treats of the *Best Time to Plant.* As with many other parts of grape culture, so here, there is some diversity of opinion, even among practical men. This diversity can be readily accounted for, and is of no serious moment, except as it begets doubts in the mind of the novice. We do not purpose examining this diversity at present, or attempting to reconcile the opinions of others; that we shall leave for another occasion. We shall now, as heretofore, simply give the results of our own experience. We may say, however, that parties are pretty equally divided between spring and fall planting. Each has its advantages and disadvantages, but with us the advantages have, on the whole, been greatly in favor of fall planting. Something is due to the soil and its condition; but we take it for granted that the soil has been prepared as we have directed, and we therefore admit of no exception in case of a heavy soil. Let us look for a moment at some of the reasons for preferring fall planting. The buds of the vine in the fall are firm, and the whole vine in better condition for handling, and consequently receives less injury from the rough usage of careless men. In the spring, on the contrary, the buds are usually soft at planting-time, and easily injured. The first warm weather starts them from their winter sleep, and a slight knock either breaks them off, or bruises them so as to impair their vitality. If bruised, the growth is feeble; if knocked off, we have to depend upon a secondary bud, which is not always present; in either case we have lost the primary vigor of the plant. By planting in the fall, these casualties may be mostly avoided; the vine is then in all respects in better condition to bear the shock of removal; we may rely with much certainty upon having the primary buds intact, and a consequently strong growth is thereby insured. The difference between a primary bud and a secondary, or an injured one, is very often the difference between a whole season's growth.

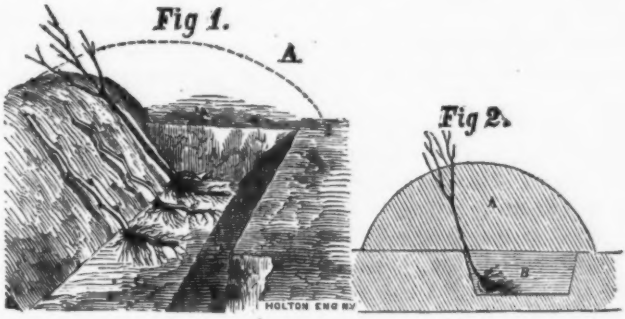
Thus much for the top of the vine. As to the roots, we think a vine may be lifted and sent a long distance with much less injury in the fall than in the spring. The hygrometric condition of the atmosphere is more favorable; the vine has prepared itself for its winter rest, and is less affected by atmospheric changes; a warm day will not stimulate its buds; it is all prepared for its long winter sleep, and only needs that a suitable bed be prepared, where it may repose till the genial warmth of spring shall wake it into activity again. There is still considerable warmth in the ground, and if the planting is done early, the roots readily adapt themselves to their new abode, and the vine is in all respects in good condition for renewed growth in the spring. In the fall, too, we usually have more leisure

for planting, and are therefore less tempted to hasten the work and do it imperfectly. Even if all these advantages in favor of fall planting did not exist, we should greatly prefer buying in the fall, because of the certainty of getting vines in better condition, and the incalculable advantage of having them at hand when wanted, and entirely under control as respects handling, and consequent safety from injury to buds and roots. In the spring, the pressure of work is very great; orders are apt to be sent late, and tardily executed, and the vines come to hand in bad condition, the buds being started, and the roots bruised and dried, and in the hurry of the moment the vines are carelessly planted. Often the bundle remains unopened for days; and as the vines are soon to be planted, it is thought unnecessary to heel them in, and the injury thus caused is productive of much disappointment, and not unfrequent grumbling at nurserymen for sending "such poor vines." The vine, however, is of such native vigor, and so tenacious of life, that even the most adverse circumstances often fail to subdue the living principle within it; and thus it is that it survives shocks of violence that would destroy most other plants. If the vines are received early and in good condition, and are properly cared for and planted, the objections to spring planting are greatly lessened; but this is not often the case; and the risks run are always so much greater in spring than fall, that we do not hesitate to recommend fall as decidedly the best time for planting the vine. If the ground is not prepared, or any reason exists to prevent planting in the fall, then purchase the vines in the fall, and heel them in.

If vines are in pots, they may be planted almost any time. Some nurserymen lift their vines in the fall, and keep them in sand in a cool cellar during the winter, and this all should do who have the convenience; they are thus in good condition for spring sales; but the careless handling of indifferent workmen often more than neutralizes all the manifest advantages of thus keeping the vines during the winter.

We have said that vines should be at least purchased if not planted in the fall, and "heeled in." This is a professional term which many of our readers may not understand. It consists simply in laying plants close together in a trench, and covering the roots with soil; a very important aid to the gardener in all kinds of planting. If plants are "heeled in" in the spring, the roots alone may be covered; if in the fall, to remain during the winter, the tops as well as the roots may be covered, or the roots only, according to the kind of plant. We shall describe what is best for vines. These may be heeled in either in a cellar or in the open air. If in a cellar, it should be cool, and the roots covered with pure sand or gravel—damp, but not wet. Earth is not so good as sand, because it is liable to become mouldy in a cellar, and the mould will injure the roots of the vine. The tops will need no covering. If the vines are kept out of doors, a dry spot should be selected, and if the soil is light or sandy, so much the better; if not, it should be made so, since there are serious objections to heeling in plants in a heavy,

tenacious soil, unless well drained. If convenient, a sheltered spot should be selected on a gentle slope, so that all surplus water may be carried off; the shelter in this case is of less moment than the accumulation of water about the roots, which should be carefully provided against. A trench should be opened, and the soil all thrown on one side, in the form of an embankment, as shown in figure 1.



The vines may then be laid in the trench, close together, and covered with soil, rounding it off so as to shed water, as shown in figure 2. The trench may be made of any length, or trenches may be made parallel to, and near each other. In the latter case, the earth removed in making the second trench, may be used in covering the plants in the first, and so on. If the vines have been pruned, the whole tops should be covered; otherwise a portion may be left exposed. The vines are to be laid in trenches at an angle of 45° or less, and not upright. If it is thought too much trouble to cover the tops with earth, fine brush may be used for this purpose; but manure, or any thing else likely to accumulate heat or moisture, must not come in contact with any part of the plant while thus heeled in: a mistake very often made, and with disastrous results. Early in the spring the covering should be removed from the tops; and when the time for planting arrives, the vines should be taken out a few at a time, and the roots as little as possible exposed to the air, as heretofore insisted upon.

Vines thus treated will keep well during the winter, and be in good condition to plant in the spring. They may be pruned when heeled in, or at the time of planting. Our next will probably treat of the *Best Kinds to Plant.*

LANDSCAPE ADORNMENT, No. XIV.—APPROPRIATION.

BY GEO. E. WOODWARD, CIVIL AND LANDSCAPE ENGINEER, 29 BROADWAY, N. Y.

The appropriation of all that is beautiful in adjoining or distant scenery is undoubtedly a self-evident right of the landscape artist; and as the hill and valley views, the broad river, or the distant mountain, are considered among the impor-

tant charms of a country home, improvements should be so managed that they occupy their true and proper position in the real aërial perspective picture. The three gradations of color or indistinctness which characterize every extended landscape scene should be well considered, and plantations so managed as either to perfect or cover up those views that are defective.

There is, perhaps, no finer mode of treating an estate commanding middle and far-off views than by appropriating them; and where the opportunity is presented its development forms one of the most captivating pleasures of landscape embellishment.

We have often heard expressed the great difficulty in planting a place understandingly, that is, with some meaning or object beyond the mere beauty or proportion of a tree, considered independent of all accessories. Should all things relating to artistical planting be carefully comprehended, so many new suggestions would arise as to make all difficulties vanish. The creation and perfecting of real scenery is one object of landscape gardening, and where planting embraces appropriation, the concealment of boundaries and undesirable objects, opening perspective vistas, artistic grouping, and the development of single independent specimens, one should hardly feel at a loss what to do or where to begin.

No picture is considered complete that has not the three gradations of foreground, middle, and third distance; it is quite essential, therefore, that these be understood in all studies of aërial perspective, as a different character can be given to each prospect. The size of a place has but little to do with the apparent size that can be made, only that it be not less than five acres, and its locality properly selected. We will then suppose that the landscape engineering has been done; that is, the roads, walks, and grading finished; drainage, bridges, ornamental lakes, entrances, and subdivisions of ground completed, or the well-studied plan so managed that portions be finished at once, and all other portions, when joined at any future time, shall harmonize with each other and as a whole; we are then ready to cut out or plant up our vistas and pictures. To give extent, concealment of boundary fences and division lines is necessary, and this can be done in several ways, as by the sunken fence or ha! ha! by close thickets of shrubbery, at a proper distance by the wire fence, or in some cases between agreeable neighbors by the omission of an apparent division line. The rolling character of the ground will often conceal boundaries without the assistance of art. Disagreeable features of the landscape should also be concealed from the prominent points of view, and broad stretches of monotonous scenery broken up or divided.

To open a vista artistically is a skilful matter, and requires much careful study; it should not be managed experimentally, but reveal only those features that are desirable: the cutting of a single tree or bough more than should have been done may spoil the picture. Some of the practical principles of engineering are requisite to mark it out and fix precisely the limits. It is not possible to cut

through thick groves or belts in precisely the required direction without some guide. A line should first be run out from the place of view about or as near as possible in the direction of the point which is to be the centre of the distant view; this line of reconnoisance is then used as a base line to adjust the true centre line of the proposed vista; by alternately ranging three light rods, a straight line can be run any reasonable distance. If from the top of the house or any high elevation overlooking the trees the bearing of a vista can be taken with a compass, the working line can be laid out on the ground at once.

It sometimes becomes necessary, in the formation of pictorial vistas, to create the middle distance; thus, in overlooking a valley, we get only the foreground and the far distance, and the middle one must then immediately follow the first one. The effect of the atmosphere is to neutralize the color of objects as they recede from the spectator; what is positively green at one's feet, is blue, or purple, or gray on the distant horizon, and between the two extremes there is a uniform gradation. All objects become more and more indistinct as they recede from the foreground; the sharp, clear outline of trees, and the fine finish of a road or lawn, fade gradually away as the distance increases. Among the different species of trees are to be found nearly all the gradations of color that are required in the aërial perspective picture, and by a judicious use of them those parts that are wanting may be supplied. If it becomes necessary to make the middle distance within the inclosure, or within moderate limits, then the foreground trees should be of warm, rich greens, and those intended for the second distance of negative or colder colors. The second distance then planted immediately succeeding the first, is in this manner made apparently to occupy its proper intervening position between the two others. It must be remembered that a vista all planted with positively colored trees, such as the maple or hickory, will naturally present the three gradations of distance; if it is all planted with trees having neutral tints, the effect is the same; but if the middle distance be composed of positive colors, and the foreground of negative colors, the appearance of extent is destroyed. If the foreground be of positive colors, and the middle distance of negative colors, then extent is gained in the same proportion that would be required to neutralize a positive color to such neutral colors as are used, the last apparent distance being added to the real distance. In this manner a middle distance may be planted immediately succeeding the foreground, and yet shall appear in its true place, and fill up and present a true picture.

"To make the landscape grateful to the sight,
Three points of distance always should unite."

Color alone does not constitute all of aërial perspective. The eye should be gradually carried down the distance by passing from point to point; from a prominent group on one side to one not quite so prominent on the other, as in a broad ocean view the eye is led from the top of one vessel's mast to each suc-

cessive one more distant. Perspective by finish, or a gradual departure from the polished scenery by the house to bold picturesque forms, must also be considered. There is no effect in any finely finished work placed at a distance; a picture, a statue, architectural embellishments, &c., fail in distant effect if they are not strongly and boldly defined. The high finish of a landscape should never be carried into the middle distance; the foreground is the place for that; the finished picture, the fine effect, presumes upon a gradual blending from a high polish to nature left alone.

THE CULTURE OF THE CARNATION.—I.

BY AN OLD COUNTRYMAN.

I AM glad to see, Mr. Editor, that you have lately taken hold of Florists' flowers in the pages of the HORTICULTURIST.

The articles of Mr. Richardson on the Dahlia, and of Mr. Barker on the Polyanthus, both flowers old and long-loved favorites of mine, induce me to think that a few remarks on the Carnation from an old amateur may not be unacceptable.

The uninitiated should be first informed that Carnations are, by the old Florists, divided into three classes, namely, *Bizarres*, *Flakes*, and *Self-colored*. The Bizarres are those which have two or more colors, in addition to the white or ground color, running in stripes through their petals. The Flakes are those which have but one color only besides white running in a similar way. The Selfs are those which are of one color only. There are crimson, purple, and scarlet Bizarres; purple, scarlet, and rose Flakes; and white, pink, purple, and crimson Selfs.

Then, there are Picotee Carnations, which differ from the former in the markings of their flowers, which consist in edgings or lacings of one or more colors running round the edges only of their petals, the remainder of which are either white or yellow.

The above embrace nearly, if not quite, all the varieties of Carnations that were held in estimation by the most celebrated Carnation growers. Of late years various other nondescript varieties have been originated on the Continent of Europe, which, however, have found little favor with the "knowing ones" of the fancy, as their want of the primary requisite of a snow white ground color has condemned them to the florist's eye. When well grown, a Carnation bloom should never be less than three inches in diameter. Many varieties may be produced over four inches. The center or crown of the flower should be prominent and well filled with petals. The ground color pure, clear, and free from spots, and the edges of the petals smooth and without notches.

To grow Carnations in perfection they are best in pots. The soil or compost should be one half good loam and one half old stable manure. To this a small

portion of sand or road grit may be added. The top spit of a pasture, turf and all, and a quantity of stable manure heaped up in alternate layers of equal thickness about this time of the year, and left standing through the next winter, will in the spring, if cut down and thoroughly turned over, be fit for use.

Carnations may be purchased at the nurseries either in the fall or in the spring. At these times they are in small pots; and if obtained in the fall, they should be kept in the same pots in a common garden frame through the winter. During severe frost the lights should be kept shut, but whenever the temperature is above the freezing point air should be admitted by lifting the light a few inches. It is best to plunge the pots in ashes or saw-dust, and but very little water will be required from November until March. Damp is the thing to guard against at that season; and if any blue or black spots show themselves on the leaves, too much moisture at the root is the cause of it, and withholding water the remedy, with plenty of air.

The beginning of April the plants must be placed in their blooming pots. These should be ten or twelve inches in diameter, and each pot will take four plants. First enlarge the drainage hole at the bottom of the pot to double the size it is usually made. Then place two or three pieces of broken potsherd over the hole, and upon these some of the coarsest part of the compost, which should be used from the heap in its rough state, as thrown together by the spade, without sifting. As before remarked, a little sand or road sweepings may be mixed with it, especially if the loam is of a stiff or clayey nature.

The large pot being filled about half full with the compost, press it down moderately with the hand, or by striking the bottom of the pot on the ground. This is to prevent too great a settlement of the contents of the pot after the plants are placed in it. Then turn the young plants carefully out of the small pots without breaking their ball of roots, and place them in the large pot so that their lower leaves will be about half an inch below the level of the edge of the pot. Fill up carefully about the plants with compost, and the operation is complete.

The compost should, during the winter, be kept covered over to prevent its being saturated with water by storms, or, what is better, be placed in an open shed, where, while protected from wet, it is benefited by exposure to frost. Therefore, when used in potting, the compost should be only moderately moist and crumble readily in the hand. This is essential to prevent its becoming too close in texture in the pots to admit the ready ramification of the roots (which will now grow rapidly) through it.

After potting, the plants should be watered, and then placed again in the garden frame. Until the middle of May, all that will be necessary will be free admission of air daily, and water if necessary; but in all probability for the first month after potting that will not be required.

By the middle of May, or earlier if the weather is mild, the pots should be placed out of doors, where, without having the full force of a mid-day sun, they can get it

nevertheless, either morning or afternoon. Protect the sides of the pots from the sun but do *not* plunge them.

As the flower stems rise, sticks must be supplied to support them; and as heat increases, more water will be requisite.

When the flower buds, or "pods," as florists call them, have filled out well, so as to be nearly of equal size throughout their whole length, a piece of bast matting or thread may be tied round the pod about the middle to prevent its bursting at the side, (which accident would disqualify the flower for exhibition;) and as soon as the color shows by the protrusion of the petals at the end of the bud, if it is wished to have the bloom protected, a cap must be placed over it, or the pot must be placed under an awning.

Those who make a specialty of Florists' flowers usually have an awning made of muslin or canvass, supported on a wooden frame, to cover their Tulip bed; and as the Tulips have been removed before the Carnations come into bloom, this serves the efficient purpose of protecting the Carnations. Those who have seen a collection of one or two hundred pots of Carnations in full bloom, arranged on either side under the awning, with a walk up the center, will not easily forget the gratification either to their eyes or to their olfactory nerves.

Assuming the amateur enthusiastic enough to establish such a collection, and thus protected in their blooming season, let me recommend him to water the plants when in bloom moderately; to keep the sun off by the awning; to admit air liberally at the sides; and, above all, to keep the ground under the awning damp by sprinkling from the watering pot, repeated frequently during the day, so as to keep a moist atmosphere around the plants, which will be the means of preserving the bloom much longer in perfection.

(To be continued.)

[Florists' flowers have, on the whole, been too much neglected among us; and any thing which will tend to make them more widely known, and their habits and treatment better understood, will be peculiarly welcome. "An Old Countryman's" remarks on the culture of the Carnation are timely and valuable. The Carnation we know to be one of his special favorites; indeed, it is every body's favorite, and a man feels happy, if ever, when some lovely Emma or Carrie tenderly places a Carnation in his bosom.—Ed.]

AN HOUR IN THE VINEYARD.

BY JOHN S. REID, FAYETTE CO., INDIANA.

Having opened the *Horticulturist* for June, and examined some of the valuable articles therein, Mercury, my old mentor, hinted the propriety of spending another hour in the vineyard for 1861. How changed is the scene and the times

from those in which I penned my last "Hour;" for then, the beautiful valley in which I reside was calm and peaceful as a "summer's lake;" *now* the sound of martial music and the mustering of armies are heard all around me. From many a house, and battlement, if I may use the expression, the "stars and stripes" float in the balmy breeze; so that, although Man may feel and act the warrior, Nature smiles in peace over all her works.

But let us talk of the vineyard, and the young vine. This is the season here, when the air is fragrant with the blossom of the vine; and although many of your correspondents seem to indulge their fancy in hunting for, and eulogizing *new* vines, from the Delaware down to the latest one unchristened and unnamed, I for one love to spend a few passing hours with my old favorites and old friends, the Isabellas and Catawbas, whose shade has so often sheltered me from the summer's sun, and whose luscious fruit has so frequently added a finer relish to the pleasures of life. I regret, my dear editor, that you do not live within a hundred miles of the vineyard, and that there is no railroad line stretching its iron rails from our humble home to your city palace; for if there were, then you might enjoy with me in the summer's eve, a goblet of the juice of the grape, more luscious and more nutritious than Byron's "Hock and Soda Water."

But I am wandering from my subject, and make all apologies for the digression.

My residence is in about the fourth parallel of north latitude, on the bank of the White Water, and my vineyard is situated on a small mound, which some antiquarians think was the work of the Mound Builders of the West. Be this as it may, a thousand years must have passed over its summit since the first handful of earth was thrown upon it; for the mouldering remains of majestic oaks and stately walnuts attest the fact; while the red man's traditions afford no clew to the abode of the original builder.

Situated, as I before stated, in the 40th parallel, I wish to inform you and your countless readers, the effects of the late winter on my orchard and vineyard.

The mercury seldom fell below zero last season, although for a few days at separate times it went as low as 10° below this point; but I find no injury done to the vine, of which I have some forty varieties. The fruit buds opened beautifully in spring, and the rich blossom holds out the prospect of an abundant vintage. Growing side by side, I have the Catawba, Isabella, Diana, Clinton, Madeira, Concord, and White Fox, not one of which has, so far, shown the least signs of mildew, blight, or any other disease, but each and all are full of embryo clusters of grapes. I have the Delaware, El Passo, Anna, Rebecca, Clara, Herbemont, and Union Village, doing well for young vines; with a vine called the "Wellington," which I received from Canada, whose bunches are reported to average three pounds each, making excellent growth. All of these, during the winter, I covered with leaves and earth, to protect them from the cold, so that when I opened the border in spring, they were all alive and ready for action.

Having tried patiently for several years the culture of the European wine-

grape in the open air, I am forced to acknowledge it a failure, and the vines worthless for this latitude.

My plum and peach trees are full of fruit, and what is strange, I have seen but one curculio this season up to date. Strawberries abundant to satiety; raspberries and blackberries, prospect extremely good, and gooseberries and currants more than abundant.

My apple and pear orchard is too young to bear this season, but the blossom is rich and profuse; so that of all my fruits, the cherry is the only failure.

Your beautiful plate of the "Anna" in the June number, I much admire, and having a seedling grape of my own, which I named the "Anna" some year or two before I heard of the one you refer to, I will watch *their* development with much care and attention; and as I have several seedlings that should fruit next season, should *we* survive the *war*, and the UNION be sustained, I may pass another hour in the vineyard, and report the result of our labors.

Although an amateur in Horticulture, I am thought much of an enthusiast in grape vines. I have been searching for some time for a white or yellow grape, equal in *size* and *quality* to the Sweet Water, and for such have offered premiums through *our* Agricultural Society, but found no *native grape* of a similar quality and size.

Nor could I find a black or blue grape, equal in size and superior in quality to the Catawba; and if any of your readers have either a white, yellow, or red, or blue grape that will fill the bill, I will be glad to have specimens sent to my address, per express, at my expense, and a reciprocation of favors will follow.

I have some seedlings that show excellent indications of valuable fruit, but until next season nothing *certain* can be ascertained. I look upon the Delaware as one of our most excellent of grapes, but the size of the bunch and berry is not so large as is wanted; and so far as my experience goes, it is not a strong growing vine. My "Anna" is a strong grower; berry, white but small; leaf, five-lobed; not tomentose in excess, but like the Black Hamburg when young, and getting coarser with age; vine, five years old from the seed last season.

Wishing a long life and happy exit, through a vale of roses whose leaves are dipped in the otto of the wine, I subscribe myself your friend.

[You have enjoyed an immunity, in respect to your Isabellas and Catawbas, which very few can boast of. Yours is almost a solitary instance, and must be owing to something peculiarly favorable in your position or locality. We do not wonder, therefore, that you can pass an "hour" so pleasantly in your vineyard; we wish we were near enough by to enjoy it with you. With only 10° below zero, you had not much to fear: here we registered 30° below. We should be delighted to see one of those *three*-pound bunches. Can you send us the name of your Canadian friend? Your experience with the European grape has been that of all others who have attempted its growth. Plenty of peaches, plums, straw-

berries, blackberries, &c., and only *one* curculio! Surely you must be living in a land of promise. We think there can be no doubt of your passing another "Hour in the Vineyard," and shall therefore hope to have the pleasure of seeing your seedlings. In the meantime, since we have one Anna, we would suggest that you change the name of yours to Emma, or some other pretty name, provided the grape proves to be sufficiently good. We think Allen's Hybrid will fully answer, and even exceed the requirements of your prize grape. We prefer both the Anna and the Cuyahoga to the Sweetwater. You may expect to get some grapes in the fall that will satisfy you on both points. The Delaware is not a coarse grower, but we think it is fully entitled to be called a strong grower; a feeble growing vine will certainly not bear the extremes which the Delaware is known to endure with impunity. We reciprocate heartily all your good wishes. Speak oftener, so that we may become more and more familiar with the sound of your voice.—Ed.]

BROOKLYN HORTICULTURAL SOCIETY.

The Brooklyn Society held its Second Conversational Meeting and Exhibition at the Athenæum on Tuesday evening, July 16th, and we are glad to learn that it surpassed the first in point of interest and attendance. The evening was rainy, and prevented some from showing their plants, but there was nevertheless quite a number of very fine plants on the tables. We are indebted to the Corresponding Secretary, Mr. Miller, for an account of what was said and done.

Mr. Hamlyn, gardener to W. C. Langley, Esq., exhibited beautiful specimens of the Stanwick and Boston Nectarine, taken from plants four years old, grown in tubs. We have since seen these trees and others, and must say that they reflect great credit on Mr. Hamlyn's skill and good management. Mr. Humphreys exhibited a remarkably fine Screw Pine, a Sago Palm, Fuchsias, Begonias, Dracænas, Caladiums, Marantas, Double Hollyhocks, Verbenas, Bouquets, etc. Mr. Brophy exhibited Seedling Pansies and hot-house Grapes. Mr. Burgess exhibited his new Dwarf Digitalis, or Fox Glove, and another seedling, with the flowers disposed around the stalk. He had also a plant of Daphne cneorum, one of the finest hardy evergreen border plants we have; the bloom is nearly constant and very fragrant.

President Degrauw called the meeting to order, and introduced Mr. Pardee of New York, who, in his usual felicitous manner, made some interesting remarks on the advantages of such meetings, and urged the members to make them a mutual benefit to the gardeners and the amateurs, by asking questions on subjects in regard to which they wished for information. He urged the Society to prepare a list of subjects, to ask questions on which would suggest to many the want of information on such subjects.

Mr. Brophy asked for the best method of striking roses from cuttings, saying that formerly his gardener was very successful, but latterly had not been. He wanted the information, and it might be useful to others.

Mr. Fuller, in reply, explained the method of Messrs. Dailledouse and Zeller, among the most successful rose-growers in the country, for hardy, out-door roses. They take the cuttings in the fall, and put them in ordinary good soil, in a bed where they can be covered by a sash, and leave them till spring, when most of them will be rooted, and ready to plant out as soon as the ground is suitable. For pot roses in green-houses they take the cuttings in the spring, and strike them in sand in the green-house; they grow very easily. He said that if plants, and particularly all hardy plants, be taken up in the fall and potted, and kept in the green-house till spring, the cuttings from them will root much quicker than from open air plants. The tree pæony can be grown readily fram cuttings in this way, and so with many other plants which are hard to propagate.

Mr. Fuller then remarked that he had a word to say to the gardeners, and that was, if they knew of a better way of growing a certain plant or flower, it was their duty to let the public know how to do it. What would the gardeners of the present day know of gardening, had past generetions kept all they knew to themselves? There is no one who can not learn and impart information, and this is the place to do it. If one gardener knows how to grow Dahlias, or Roses, or Pinks better than any body else, let him tell his plan; and then he might, in return, get a suggestion which would still further improve his method.

Mr. Pardee urged the gardeners to look at it in that light, for they might tell a hundred persons just how they prepared the soil, and how they treated a plant, but not two out of the hundred would follow the directions exactly. They would vary a little, and so not come up to the standard of the gardener.

Mr. Brophy made some interesting remarks on the history and cultivation of the Pansy. He also gave an excellent account of his houses, and the difficulties of growing grapes under glass, and told how to obviate them.

Mr. Burgess, East New York, gave an account of his new Dwarf Digitalis, raised from seed; also another new variety, which is very fine, and has the flowers all around the stalk instead of on one side.

Mr. Hamlyn explained his method of growing Nectarines under glass, in which he has been very successful. He also gave an account of his mode of forcing grapes in pots. He grows all his grapes for forcing in large pots, and in fifteen months from the cutting, he has them in full bearing; and as soon as they are over, throws them away, and starts new ones in the same pots. By keeping up a succession he always has plenty, and in much less time than by the ordinary way.

Mr. Pardee said this surpassed any thing he had known of grape culture. He related how Dr. Grant, of Iona, planted a vine, and the astonishing growth it had made. He dug a hole two feet square, and eighteen inches deep; then put in

about three inches of pure surface soil, spread the roots all carefully out as they were grown, and then put on three inches more of this surface soil; on that about three inches of real good stable manure, and then three inches of ordinary garden soil. This left it about three inches below the ordinary level to collect the rains and nourish it. It has now grown over six feet since the first of June, and has two fine bunches of fruit. Such is the result of knowing *how* to do it; and it is just this kind of information that all want, and by attending these meetings of the Society all are encouraged to persevere.

Mr. Brophy proposed a vote of thanks to Mr. Pardee for his excellent suggestions and attendance at the meetings, which was unanimously passed. After which they adjourned to meet again on the first Tuesday in August at the same place.

We are really much pleased to see these Conversational Meetings fairly inaugurated. If faithfully persevered in, they will diffuse a great deal of valuable information, and give the Society a character for usefulness as well as show. They are now doing what we urged them to do some five years ago; and we can not help thinking that they have, in some sense, squandered five years of valuable time. Let them now concentrate their energies, and make up for it.

PHENOMENA IN THE CROSS-BREEDING OF PLANTS.

We have lately published something on Hybridizing Plants, a subject of peculiar interest in whatever light viewed. The following interesting article is by Mr. D. Beaton, an old veteran, at present at the head of "hybridizers" in England. The article is taken from the London *Journal of Horticulture and Cottage Gardener* for May 14, 1861. Mr. Darwin receives but little comfort for his peculiar theory.

"Having received the following letter from Mr. Darwin, we forwarded it to Mr. Beaton, and now publish it with his reply.

"'Will Mr. Beaton, who has made such a multitude of most interesting observations on the propagation of plants, have the kindness to state whether varieties of the same species of Composite plants frequently cross each other by insect agency or other means? For instance, will any of the Cinerarias, if kept apart from other varieties, breed true? but if standing near other varieties, will they generally, or almost certainly, produce a much greater diversity of colored seedlings?

"'I saw an allusion by Mr. Beaton to this subject in The Cottage Gardener of last year with respect to Zinnias; and from this allusion I infer that Zinnia sports much when kept separate.

"'As I am begging for information on the natural crossing of plants, I will likewise venture to inquire whether the great raisers of Hollyhocks find it necessary to keep each variety far separate from the others for raising seed. The late famous horticulturist, the Hon. and Rev. W. Herbert, when I visited him at Spofforth many years ago, remarked that he was much surprised (considering the structure of the flower and the relative periods of maturity of the pollen and stigma) how true some sorts of Hollyhocks bred, even when growing close to other varieties. I have found this to be the case with some of the varieties, and can not understand how it is possible. Mr. Beaton might, if he pleased, write an article, very valuable to physiological botanists and of some practical utility, on the natural crossing of varieties. He might indicate in which genera crossing most commonly occurred, and in which it seldom or never occurred. For instance, I have observed Sweet Peas during several years, and believe that they never cross; and it is not easy to make an artificial cross, though I succeeded at last, but got no good in a horticultural point of view.—CHARLES DARWIN, *Down, Bromley, Kent.*'

"I am not aware that any two species of Composite plants under cultivation have ever been crossed by man, or through the agency of insects. Mr. Penny, who first broke down Cineraria cruenta in the Messrs. Young's nursery at Epsom, said he got it to cross with another species, I think, from Teneriffe. It is more in accordance with the experience of cross-breeders, however, that superior cultivation induced the disposition to vary, as in the Dahlia. The Swan River Daisy, Brachycome iberidifolia, is the last instance we have of this in the garden; while Zinnia is the last variable Composite plant that has been turned into double flowers, so called. This last change is said to have been effected in India; and if it is really so, the effect may be ascribed to climate more than to high cultivation. We know the Port Natal Gladiolus (natalensis or psittacinus) could not be crossed here, or on the Continent, with any of the old Cape species or their seedlings; but in Australia, at Sydney, the cross was easily effected, Gandavensis being the first seedling of that cross; but as soon as that cross got into the hands of European cultivators they experienced no more difficulty in pushing on their crosses in the strain of natalensis. These are three recent instances of the undoubted influence of cultivation and climate over genuine wild species. For the first seven or eight years of high cultivation the Swan River Daisy kept to its original colors—blue and white—then varied into lilac and purple and minor shades. When a flower or species thus varies from the effects of cultivation or climate, the variation is also variable in degree. Some of the varieties reproduce themselves quite true from seed from the first; others, on the contrary, take some years before the color or habit is 'fixed,' as gardeners say when a variable plant comes true from seeds after sporting for some years; and some never get fixed, or have not done so yet, and Zinnia is an instance of it. In all these instances some people attribute the changes to cross-fertilization; they have been crossing

their flowers, and they have seen results, and account for them that way, deceiving themselves. But those who have studied and experimented on the effect of cross-breeding, as against the results of the effects of climate and cultivation, have long since arrived at the conclusion that crossing has no power on fixing any two plants which naturally sport; that is to say, on fixing a seedling from their union combining so much of the qualities of each of the parents as is generally the case when two permanent kinds or species, which always reproduce themselves or their like, are united. That conclusion strikes at the root of the fallacy which obtains in respect to the best means of improving all our domestic fruits; and yet crossing is an element of great value in improving flowers and fruit, which seems a contradiction, but is explained thus: Some seedlings from plants that have been crossed for a generation come quite true from seeds, some half true, and some on which no reliance whatever can be placed, or, in our language, they always sport from seed. On those which this sport-crossing has no effect—such, however, as come half true and half sport-crossing—there is a chance of an intermediate condition, and those merest varieties which come true from seeds crossing is just as effectual with them as with two genuine wild species. One would think therefore, there were no natural limits or difference between a species and a permanent variety; that is, one which comes true from seed, like the large-flowering variety of the Mignonette. In practice there is no landmark whatever between such a variety and a wild species. The garden Cinerarias are sporting plants as much as the Dahlia, yet among a thousand seedlings of each, one may turn up which will come half true from seeds, and when one finds such a seedling in any of the sporting families of common plants he keeps it for a breeder, even if it were the worst-looking in a large batch of seedlings. The way with Cinerarias more than with most plants is this—by a careful selection of kinds under high cultivation one gets a superior strain, as we say, or superior flowers, which, although they will not come true from seed, will produce more good seedlings, or less bad ones, than an inferior strain: therefore, if a good flower or good strain of Cineraria is exposed to the pollen or influence of a bad strain, the good breed is immediately deteriorated in the sporting offspring. I am not aware that any of the garden Cinerarias come true from seeds, or if any of them could now be crossed with the nearest wild species. The only Composite flower on which I ever spent time is Dahlia scapigera, the pretty little dwarf Dahlia with small shining foliage, and I think I can venture to assert that in our climate it is impossible to cross it with any of the garden Dahlias. It is just the same among Primulas; notwithstanding the freedom with which Auriculas and Polyanthuses will sport among themselves, you can not drive a seedling from all their races by the pollen of their nearest kindreds. When Primula Palinuri and sinensis, which were introduced the same year, (1816,) came into general cultivation, I was initiated into the mystery of crossing flowers, and these two were of the number which raised the hopes of the cross-breeders, particularly Palinuri, which, to a common

observer, is nothing beyond a huge Auricula; but none of the wild species of Primula would touch each other or the garden varieties. Then you see no end of sport seedlings in the Dahlia and in the Primula, in two distinct species of Primula and two botanical species of Dahlia; and yet the rest of their families obstinately hold aloof from each other, and from the sports of their respective kinds.

"The old Hollyhocks, or some of them, were fixed varieties; but whether they were so fixed from the first, or induced to fix by a long course of culture by propagation of the roots, we do not know, but the fact is well known that some of the old kinds would come true from seeds. A long course of one uniform culture renders some plants barren altogether, as Crocuses, and a long period of years intervened between the birth of some seedlings and their coming to the age of puberty—to the age of producing seeds, although they may have flowered from the second or third year from the seed. Ribes sanguineum flowered six or seven years before it began to seed; and Dr. Herbert records an instance in which a certain seedling bulb flowered fourteen years before it produced pollen or would seed.

"'The relative periods of maturity of the pollen and stigma,' seems to have been a wise law from the beginning for the preservation of the kinds of plants in their generations, for there is not a flower in a thousand that is fertilized by its own immediate pollen. The pollen is in advance of the stigma in the great mass of flowers, and the pollen from another flower on the same or neighboring stalk is the fertilizer. And here another wise law is in operation: When the stigma is ripe it is exposed to the influence of the pollen of all the plants of its own kind which may be growing near it; and the law is, that the pollen of the flower, or of the plant which is the strongest or best developed, takes the lead in fertilizing the stigma, and at the same time is able to neutralize any effects that may have been produced by an inferior pollen, or pollen from a weaker flower or sickly or stunted plant—a thing which can be proved any day in the summer by dusting the stigma with its own and sundry pollen, when one kind of pollen only will take effect. And that proves two things in addition to the proof that the best pollen takes the lead—proves superfœtation to be impossible, and also proves that the ideas of physiologists are not according to Nature as to the progress of the pollen to the ovary. They say that pollen passes through tubes of extreme tenuity to the ovules. If that were so, and more than one stigma supplied the necessary passage, more than one kind of pollen might find access to the ovules, and more kinds than enough would fertilize the embryo seeds, and superfœtation would necessarily result.

"In the instance mentioned by Mr. Darwin of Sweet Peas never crossing, they belong to a class of flowers every one of which must, of necessity, be fertilized by its own pollen in the great majority of instances. The carina, or keel, or lower petal in pea-shaped flowers is, in reality, two petals joined at the edges. The joining is the keel; the ends of these two petals lap over or fold into each

other, forming the imaginary bow of the boat; the stamens and the pistil are compressed within the folds forming the bow, and fertilization is effected in the dark, and the stigma is perfectly safe from the intrusion of foreign pollen: therefore, no garden Pea can be naturally crossed more than a Sweet Pea, unless, indeed, a strong bee with other pollen on his legs has been struggling to get at the nectar in the stern of the boat. Some of the varieties of the garden Pea may be crosses resulting from a struggle of that kind, but the great majority of them are the results of the sporting tendencies of the plant itself. This is the true cryptogama of Nature, of which, however, there are many more perfect instances. The great bulk of the order of Bellworts, or Campanulas, are real cryptogams; their fertilization is effected in the dark before the flower expands; but the Wheat might be said to be the most complete cryptogam of all the common plants. No kind of Wheat has ever been naturally crossed, and never can be. When the Royal Agricultural Society talk about the Wheat being in blossom, they are just one month behind Nature. But what they and the bulk of the country people take for the flowering of the Wheat, is one of the most beautiful contrivances in Nature as means to an end, a departure from the law of Nature as it were, to preserve food for man. The Wheat is in full flower, and the seed is fertilized while the ear is yet in the folds of the sheath before the Wheat is in ear. At that period the anthers might be said to be sessile, or to have hardly any length of stamens under them; but as soon as the pollen is shed, the husk of the anther might rot in such close confinement and endanger the safety of the staff of life, now having just received vitality. To prevent famine for lack of Wheat, however, Nature alters her common process in this matter. As soon as the anther is emptied of the pollen the stamen begins to grow, and to push up the husk of the anther away from the embryo seed; and by the time the ear is seen the husk is well-nigh out of the scales which inclose the seed, but stops not there nor till the husk is dangling from a white thread far off from the entrance to the seed-case; and when all dangers are thus provided against, the farmer congratulates himself if the weather is propitious, for his Wheat is in blossom!

"I do not know an instance 'of the natural crossing of varieties.' My own experience of variable plants was given last week, and I do not exactly comprehend what is meant by natural varieties, for all the so-called varieties in cultivation have been artificially obtained either by a change of cultivation, or by crossing with pollen such kinds or species as would sport from seeds under cultivation. These kinds I call variable plants, their own progeny being constantly variable in aspect, and just as variable when the pollen of another flower is applied to them. It is a difficult thing for a gardener to see or comprehend the meaning of what botanists call varieties, or natural varieties of plants, because there is no limit, or sign, or any other indication in their outward aspect to distinguish them from the oldest species on record, and there is nothing in the botanical structure of even a variable seedling to distinguish it from a genuine species. Professor

Henslow proved that point long since in his comparative anatomy of a cross-bred Foxglove, or some such plant. I do not know of one plant that is a cross between any two plants in a wild state. I do not know that any one has obtained a true cross in any of the pea-flower plants—papilionaceous plants, nor yet any reliable cross among all plants of the Composite order. I know one thing on which many, if not most gardeners, put a great stress or value in knowing—that is, the condition under which plants that are fit subjects for garden decoration are found in their natural habitats; but that knowledge is of little practical value, or may prove to be a hindrance to the proper cultivation of particular plants for some time, and yet might be the means of suggesting why and how plants may be, or have been, induced to cross in a wild state, or have sported into variations without crossing. That one thing needful is proved to be of so little value by the well-known fact that very many garden plants, or their immediate ancestors, did not, and do not at the present day, occupy those regions in the wilderness which were best suited to their natures. Their positions or habitats, as we say, are more often the result of necessity, not of choice. A plant that would thrive and be luxurious on the sea coast, on the plains, or in valleys in beds of alluvium, or in the shelter of high ridges, or precipitous rocks, can find no foot room in such luxury from the natural competition of more powerful neighbors, as was the case not many ages since among ourselves in the midst of civilized life; and from this competition the weaker plants must always go where they can vegetate and live a quiet life without rank or luxury—in the highways and byways of the savage wilderness, and in time they become the alpine and sub-alpine species of that part of the world from sheer necessity. They may even become sterile from a long course of the starving principle. But now recover one of them from impending fate, give it to a florist or a fancy gardener who is above the vulgar prejudice, in his belief that all plants in a wild state must, of necessity, occupy the places best suited for their natures, and he will soon tell a different version how the matter really stands, and might have stood in the wilds, if the plant could get admission to those parts for which its constitution was formed to enjoy. The plant is found to be a luxuriant grower, not at all like a mountain plant, or a rock plant, or ridge or the bare-places-of-the-earth-kind-of-looking plant one might expect from the description of its habitat. After a round of cultivation has brought it to that point from which it fell, from the competition in foreign parts, it begins to seed; and if it, or any of its seedlings, sport for joy, why, a new race is born into the world, as has been the case at every revolution of the order of things since the world began to be clothed as it is now; or if it comes true from seeds, another flower of the same kind which has already been civilized, as it were, may cross with it or by it, and a generation of gentry is forthwith on the stage of the florists, or of that of the competition tent. But suppose the wild plant had found a place suited to its nature in the struggle with stronger plants, and that it inherited the property of sporting or of crossing with another, may we not believe

that a new plant, or new race of plants might thus result by such natural means, as by the artificial process of the home cultivator? That is as far as the experience of gardeners and cross-breeders can account for natural crossing in a wild state.

"The artificial crossing of pea-shaped flowers is easy enough. All that the operator has to do is to split open the bottom part of the keel-petal or united petals with the point of a pin: that relieves the stamens, which may then be extracted, and the pistil is free also to receive foreign pollen. Mr. Knight made an experiment for getting early Potatoes to seed by planting them on a ridge, and when the plants were ready to bloom he washed away the soil of the ridge to prevent them making young tubers, and so force the whole strength of the plants or roots into the stems and foliage, to see if that would force them to seed. Another form of that experiment is applicable to all bulbs and tubers which form roots on the flowering-stems, as the Japan Lilies and others do. Pot such bulbs or tubers with the neck of the bulbs just at the surface, and when the stem is an inch or two put an empty pot over it, introducing the stem through the hole at the bottom of the pot, then earth up the stem, and when it roots and fills the upper pot separate from the bulbs, then cross it."

THE WINTER OF 1860–61.

BY WM. BACON, RICHMOND, MASS.

When summer is waning into the paleness of autumn, and the beauties of the season have passed away, it seems unnatural to go back and dwell upon the peculiar phases and effects of a winter gone by. Events do not always readily show results: so with our last winter, a season whose effects have blighted many a hope of promise, and sent disappointments into many an enthusiastic heart.

The winter, in many respects, was a pleasant one, bringing much fine sleighing and agreeable temperature; yet it gave us four cold terms, when the mercury sunk below zero. The first of these was December 6, when it fell to 6° below zero; the last was in March, when it fell, after a warm term, to 4° below. In one of the intermediate terms in January it fell to 28° below zero, which was the severest intensity of cold we have ever known. What made this change of temperature more severe, was the fact, that it had been preceded by a thaw, and so sudden was the change, that the mercury fell 64° in less than twenty-four hours.

Another feature of the winter: snow fell on the unfrozen ground in November, and the quantity increased, so that, though the cold early in December was of unusual intensity, the ground remained unfrozen until nearly spring, unless, perhaps, in some localities where the snow was partially blown off. Hence, trees at their

roots were in a moderate temperature, unchanging in the fluctuations of the atmosphere, while the trunks and branches were exposed to all the vicissitudes of climate we have before cited.

Fruit trees of all kinds came into leaf much later than usual, and it was no unusual thing to see the lower branches of pears and plums coming into full leaf while the upper branches were as barren of verdure as in midwinter. Then above a single bud might be seen bursting into leaf, while other parts of the branch looked dead. The plum, however, appears to have nearly recovered from the fatality, and though they give no fruit, the new growth of wood and richness of foliage are encouraging. Not so, however, with the cherry; many of the trees were killed outright, and gave no signs of vegetation. Others showed fruit-buds expanding, but died before they were fully developed. A few trees now show straggling signs of life by isolated clumps of verdure. Such trees are no better than dead. The woodman need not spare them for any value they possess. Those who wish for cherries had better remove them at once, and plant new trees. We have seen but one cherry tree, the present season, that showed a tolerable prospect of being worthy of a locality among living trees, and this was a seedling not yet in bearing.

Pears.—The old Pear trees are pretty nearly used up; many of them entirely dead, and many more no better. Their almost leafless branches show conclusively that henceforth they will only be cumberers of the ground. Younger trees are doing better, and give some hopes of renewed fertility.

"How have the dwarfs stood it?" Ours are all alive, but not unscathed, for, in common with young standard trees, they have suffered more from blight the present summer, than in all the previous period of their existence; and what is worse, this blight continues to show itself. We are careful to remove all infected branches as soon as the disease develops itself, and keep the trees as free as possible from all appearance of its progression.

Peaches.—The Peach trees are all dead. So there will be no more peaches until a new crop of trees are grown. We hope no one will fail to make new efforts in behalf of Peach trees. If they do, they may succeed; if they do not, they will certainly raise no peaches, and it is better to fail in making an effort in a good cause, than to fail through lack of effort.

Apple Trees.—Our old orchards, in the last ten months, have made a ten year's progress in decay, as their partly dead branches fully show forth. Young trees have suffered much by a bursting and peeling off of the bark near the ground in early spring, and many of the trees so affected have died out. As far as we have been able to learn, the Baldwin has suffered most from this cause. Whether it is owing to tenderness of the tree, or the culture given it, we are not able to say.

Grape Vines, unless protected, suffered in common with fruit trees. Their vegetative powers, where they were not killed to the ground, appeared to have

been stifled, so that what life they possessed appeared more like a struggle with death than like a successful effort in healthful vegetation. Such vines as were so affected we found it better to cut down, and let them commence again, than to waste their energies in sickly uncertainty.

Currants and Gooseberries.—The only peculiarity we have seen in them, the past season, was the very novel one that they gave no blossoms above the line where they were protected by snow in that severest change in winter. The blossom buds above this line appear to have been destroyed, yet the wood remained healthy, and the growth and foliage of this summer are beautifully luxuriant.

From the foregoing remarks, it will be truly inferred that our prospects of fruit this fall are very limited. As we have said, all fruit trees that have leaved out, came on slowly and were late. So with the blossoms, they were shown in stinted quantities and of a sickly quality, much later than usual. Apple trees were not in bloom until June, and the quantity will be small and quality bad.

Opinions are at variance as to the *time when* the foundation of this sickly state of things was laid; many have expressed the opinion, that the cold term early in March was the fruitful cause of this unfruitfulness. It may have been *a cause;* but, to our mind, the chief and leading one lay in the sudden change of temperature in midwinter, from the mildness of an autumn's day to the severe cold of almost arctic winter. We felt and remarked then, that the change was rapid enough and extreme enough to try the forest trees among the mountains, much more the more delicate plants in gardens and orchards. How could it be otherwise, with the temperature high enough to induce the opening of buds, with no frost in the ground to impede the labor of the roots and rootlets, with every pore of trunk and branch open, ready to perform its function, and in one short winter's day to change all this moisture and fibre into icy hardness?

But the loss of many trees and a year's fruit will not, we fear, be the only bad result of this winter's calamity. The desponding and faint-hearted will no doubt say, "It's no use trying; fruit trees won't do nothing; they may as well give it up." Not so; there are enough pear and apple trees left to form a bow of hope, and the cherry and peach can soon be brought into bearing. There have, perhaps, been such winters and such discouragements before, and it may be long before another such occurs. Set out two trees for all that are lost. Success will yet attend fruit culture.

[The disasters of the past winter have no doubt been great and discouraging enough here; but in Europe they have been infinitely greater, and for two or three months past English horticultural journals have devoted a large portion of their space to accounts of the losses. They are wise enough to profit by such things; we ought to be equally so. It is weak and cowardly to give it up because of a single defeat. We may not have another such winter in fifty years;

and we have already learned enough to protect us from many of its casualties. There should, therefore, be no hesitancy in repairing our losses at once. It is interesting and important to know, however, what is, and what is not hardy.—Ed.]

NOTES ON CALIFORNIA VINEYARDS.

BY OUR CALIFORNIA CORRESPONDENT, J. Q. A. W., SAN FRANCISCO.

The following is a list of Vineyards in the city and county of Los Angeles, California, from the official lists of city and county assessors, 1860:

NAMES OF PROPRIETORS, ETC.	BEARING VINES.	YOUNG VINES.	ACRES CULT.
Josi Yburra,	2,000		2
Louis Wilhart,	8,000		8
Ramon Yburra,	4,000		6
Guadeloupe Romero,			8
Estate of H. Cardwill,		2,000	6
Nuvis Ruis,			7
Josi Sepulvida,	4,000		4
Geronimo Yburra,	1,000		1
A. Beunsont,	2,000		6
Christoval Aguilar,	4,000		4
Diego Sepulvida,	7,000		14
Januariso Avila,	4,000		8
Vinrinz Hoover,	5,500		7
T. J. White,	14,000	6,000	20
Sansevaine Brothers,	50,000		60
Lugurda McLaughlin,	8,000		8
Joseph Hoover,		12,000	14
John Roland,	14,000	11,000	30
Mateo Keller,	8,000	50,000	60
W. Wingastner,		10,000	20
Paul Kern,		7,000	15
John Behn,		5,000	8
Chs. Baner,		10,000	20
P. Collins,		8,000	20
F. Lopez,		8,000	50
B. Burtamente,		8,000	16
Michel Sner,		6,000	14
Clara Reyes,	3,000		14
—— Labory,	12,000		12
Musser's Hammerl,	8,000	20,000	32
Manuel Corowie,		16,000	32
Josi Rubio,	10,000	10,000	20
Wilson & McDonald,		15,000	30
Felipe Martin,		12,000	15
Howard & Chaplin,	12,000	20,000	50
Leach & Baker,		20,000	44
Alexander & Buchanan,		20,000	20
Geo. Carson, administrator,			20
Jno. R. Scott,		50,000	60
Juan Padilla,		20,000	35
Paul Prior,	6,000		8
Wm. Wolfskill,	90,000	10,000	120
Ant. F. Coronel,	20,000	20,000	60
John Frohling,	8,000	10,000	18
Ramon Valensuela,	4,000		8
Villa Labos,		6,000	8
Cristoval Aguilar,	10,000	20,000	60
Ysidro Reyes,		10,000	15
P. Commonfort,	4,000	4,000	8
Geo. Dalton,		8,000	35
Foster & Woodworth,	10,000		12
Intian Chaves,	2,000		13
James Weibel,		4,000	4
John Farrell,		6,000	6
Julius Weyser,	6,000	8,000	17
B. Bronius,	8,000		17
Y. Reyes,		15,000	25
Pierre Lassevalle,	4,000		7
Chs. Cassagne,		5,000	7
Francisco Botteller,	8,000		16
John C. Bejar,		10,000	
Abel Stearns,	2,000		8
Manuel Riguerra,	8,000		8
Francisco Alvarodo,	4,000		6
Chs. Chapman,	3,000		3
Valder estate,	2,000		2
J. S. K. Ogier,	5,000		6
Thomas Urquides,	5,000		15
H. Clayton,	4,000		6
C. Moreno,	4,000		7
Augustin Machado,	8,000		8
—— Reyes,	10,000		30
O. W. Childs,		12,000	40
Eulogio Celio,	8,000	8,000	48
Antonio Rocha,		15,000	35
Henry Hancock,	5,000	25,000	40
Daniel Martin,		8,000	15
Mrs. Flashner,		14,000	30
Viel & Delano,		12,000	20
Louis Mewcham,		10,000	30
Sisters of Charity,	8,000		12
Juan Apabloza,	4,000		6
John Domingo estate,	8,000		12
Josepa Perez,	12,000		20

NAMES OF PROPRIETORS, ETC.	BEARING VINES.	YOUNG VINES.	ACRES CULT.
Elijah Moulton, - -	5,000		20
Henry Burrows, - -	10,000	10,000	25
F. P. F. Temple, - -	5,000	20,000	100
Francisco Lopez, - -	14,000		20
M. Clements, - - -	8,000	12,000	24
Martin Lelong, - -	5,000	10,000	20
Andres Pico, *San Fernando*,	35,000		40
Viento de la Asa, *Encino*,	5,000		10
Benj. Wilson, *San Gabriel*,	40,000	80,000	100
German Vineyard Co., "		400,000	1,000
John Roland, *La Puente*,	6,000	2,000	30
Wm. Workman, "	10,000	45,000	15
Yerba family, *Santa Anna*,	20,000		40
Ygnacio Alvardo, *San José*,	6,000		10
Ygnacio Patomares, "	7,000		20
Henry Dalton, *Azusa*,	25,000	10,000	150
—— Duarte, - -	2,000		40
Barton's estate, *Los Nietos*,	6,000		12
Carpenter estate, "	12,000		40
Josi Colima, - -	4,000		50
F. P. F. Temple, *El Monte*,			200
Flores, "	4,000		10
Rancho de la Cienega, -	3,000		25

The above is the only complete list published, and will give your readers some idea of the number of vines now under cultivation and in bearing in the city and county of Los Angeles. Of course, large additions are being yearly made.

I have in a previous letter stated, somewhat briefly, facts connected with the culture of the grape and wine making, in Los Angeles County, and shall in later letters go more fully into the subject, when I have more time. I believe in my last I promised to give you some description of other wine establishments in the city. Pausing now for a moment to speak of the ALISO VINEYARD, owned by Sansevaine Brothers, situated only a short distance from the main street. The name is derived from a large tree which is growing in the yard near the house, its huge branches covering almost the entire portion of the establishment devoted to the wine presses, distillery, &c.

The number of acres inclosed to the vineyard and garden is eighty-one, comprising some sixty thousand vines, fifty thousand of which are in bearing, producing a crop of about seventy thousand gallons of wine. The varieties made here are the Red, White, and Sweet Wine, or Angelica, and the celebrated Sparkling Champagne. They also make about four thousand gallons of Brandy.

During the vintage season, they employ some thirty hands, principally Indians. Connected with the establishment there are five large cellars, each one hundred feet deep by eighteen feet wide. Another, eighty feet long by eighty feet wide, contains about fourteen hundred pipes of wine. These cellars, I noticed, were filled with wine, and contained in all from one hundred and fifty to two hundred thousand gallons, of all kinds and vintages, from 1858 to the present time. All these cellars were on the ground.

The vineyard was looking very flourishing, and the fruit of large size, and very plentiful. Dividing the vineyard is a long arbor of trellis work, six hundred feet long, covered with vines and fruit: a truly beautiful sight. But the orange grove and garden particularly attracted my attention. This garden is surrounded by a high fence, and on entering, the sight is charming indeed; like a very paradise; the perfume of the oranges, fruits, and flowers, filling the air. There are in bearing about thirty trees, many of them of large size and loaded with fruit, which has the past season brought over one thousand dollars. The citron trees, some fifty in

number, were also loaded with fruit, of monstrous size; these trees are in bearing generally after the sixth year. In the orchard are three hundred and fifty orange trees, nearly in bearing condition. The orchard contains also about three hundred peach trees, which have borne profusely, the fruit of which is partly sold, and the balance made into excellent peach brandy. The pears, apples, figs, and other fruit trees, were looking well, and sufficient crops are raised for family use.

The conveniences and arrangements for making wine are very extensive. The process for making brandy is the most complete in the county. The still is a large one, imported from France expressly for their use, made by François Vivarre; its capacity is about three hundred gallons per day. The process is the same as that by which cogniac is made in France. The whole is under the charge of Fernando Vittal, long experienced in the business in France, and who has been at the Aliso vineyard for six years. There are thirteen large tanks for fermentation, holding about fifteen hundred gallons each.

It is at this place that the celebrated Sparkling California Wine is made, which is now having an immense sale, not only here, but at the East, from which latter they are now receiving orders of from three to four hundred dozen cases per month. This wine commands twelve dollars per dozen, at wholesale. At the establishment in San Francisco, there are in the cellars sixty thousand bottles of Sparkling California Champagne. We tasted a delicious article of their manufacture, called the Nectar of Walnuts, which has not yet been made in quantities sufficient to send to market, but they expect, the coming season, to manufacture a large quantity.

Near by are the Aliso Mills, conducted by Mr. Ponlain, worked by water power from the Los Angeles river, by a flume one mile long and ten feet high. From this is formed a beautiful cascade, or sheet of water, falling the distance of ten feet, producing a beautiful effect. This water, passing off by the main yanka, is distributed to other tributary streams, irrigating the vineyards. The main avenue leading to the mansion is about a quarter of a mile long, lined with trees and shrubbery; and the whole appearance of the place is attractive and imposing.

Mr. P. Sansevaine has already gone to New York to open a branch house for the sale of their wines in that city. About three hundred pipes have already been sent, to be followed by regular shipments. I have no doubt the enterprise will be fully successful. Your readers and the public will have a good opportunity to test fully our California wines, and the famous Sparkling Champagne.

During my visit to Los Angeles, I visited all the prominent vineyards in the city and county, some of which have been described in my notes to the Stock Journal. There are many vineyards here of good repute. Kohler & Frohling, Wolfskill, Julius Weyse, John Rains, Don Benita Wilson, Dr. White, and others. But as I stated in a previous letter, the most celebrated wine comes from Coco Mongo, in San Fernandino County; this vineyard is owned by John Rains, and contains some hundred and fifty thousand vines. This is owing to the peculiar nature of the soil, and care in manufacturing, although the location, near the moun-

tains, favors the grape amazingly. This wine is some twenty per cent. above Los Angeles wine in saccharine matter. The soil is a gravelly loam, containing chemical properties especially adapted to the cultivation of the vine.

The charge of adulterating wine should not wholly be laid to the manufacturers, as the mixing process is mostly performed by parties who buy up good and poor wines, and doctor them up in San Francisco, to the discredit of those honorably engaged in the business. Policy requires the truth; and we hope that a different state of things may ensue. When the business is under the control of men able to carry it on safely and scientifically, then the errors will be avoided under which the business now suffers.

I might go into detail and give the full particulars concerning the laying out and cost of a vineyard, as well as some important points connected with the culture of the grape in California, but time will not admit with this article. I have notes of much interest connected with this subject, from my own personal observation, which I may embody in future letters, should you desire. It is an undisputed fact that there is no plant, tree, or vine grown, that will in time, and with proper care, prove so beneficial and remunerative as the grape; and with us here it is destined to play no unimportant part in the future products of our state.

I will, in conclusion, give you a statement showing the articles shipped by the forwarding house of Tomlinson & Co., of Los Angeles, from the 1st of January to the 20th November, 1860, from their books, which I obtained while there, through the courtesy of their book-keeper, J. L. Miller:

"Wine: 464 pipes; 165 bbls.; 17 ½-casks; 20 kegs.

"Brandy: 2 bbls.; 6 ½-pipes.

"Grapes, 1046 boxes, 120,431 lbs."

The above merely shows the shipments by one house; the other house of Banning and Hinchman probably sent as much.

This will close for the present my notes from Los Angeles. In my next, I will give you some account of my trip to Santa Clara valley, with a full description of the extensive vineyards, wine making, &c., and sketches of the beautiful gardens in and about the city of San José.

GARDENS AROUND BOSTON.

BY REV. A. D. GRIDLEY, CLINTON, N. Y.

One way to acquire information on the subject of ornamental gardening, is to study books which treat of it. Another is to visit good specimens of such gardening, and examine them somewhat in detail. The last is important as a sequel to the first. It fixes in the mind and illustrates what one has read, and it inspires him with an enthusiasm which never comes from books alone. Whoever visited

the home of the late Mr. Downing, at Newburgh, during his life, came away with many new ideas and new impulses. No one who has traversed the grounds of Mr. Kelly, at Rhinebeck, or of Mr. Sargent, at Fishkill, or of Mr. Hunnewell, near Boston, and other places like them, will fail to remember many things which he then saw, or soon cease to feel the new interest they gave him in the pursuits of refined rural life.

It was the privilege of the writer to visit, last summer, the grounds of Mr. Hunnewell, at West Needham, Mass., and of Mr. Hovey, at Cambridge; we wish, now, to share with others somewhat of the information and pleasure those visits gave us.

The Worcester train from Boston sets you down at Needham, within a short carriage ride of Mr. Hunnewell's gate. As you approach the place, the eye catches glimpses of the house, of goodly trees and a well-kept lawn—views which have been opened, it would seem, with an eye to the best effect. The iron gateway, on the Natick side of the premises, passed, we walk up the broad "approach" skirted by white pines and larches. These have been only ten years planted, and yet are twenty-five or thirty feet high. Notice this carriage-way; how finished the grading, how smooth, hard, and clean it is kept. Here, at the left, is the nursery-ground, where the proprietor planted and trained his trees before setting them in their present positions. And here, now, are many of the newer trees going through a period of probation, in which their hardiness and adaptedness to the American climate will be tested before they can be advanced to conspicuous posts of honor and duty.

Drawing nigh the house, our attention is attracted by a Weymouth pine clipped in the shape of a bee-hive or small hay-cock. Not an inch of trunk or branch is visible; it is only a round, wavy globe of silvery foliage, soft to the touch as a mass of plumes, and in all respects very singular and beautiful. It seems almost incredible that the lordly pine, which naturally aspires to vault more than a hundred feet into the air, can be so easily subdued to the dimensions of a lowly shrub. Just beyond this, is a circular bed of dwarf evergreens, pigmies by nature. Let us read the names on the labels: *Abies Gregorii*, *A. pumila*, *A. Clanbraziliana*, and *A. pygmæa*; *Pinus strobus pumilis*, and *P. sylvestris pumilis*. These are all accommodated within a bed some twelve feet in diameter, and have room to spare. The books tell us that these miniature trees will hardly exceed twenty inches in height in as many years. Odd, ar'nt they?

Across the carriage drive are several large magnolias of different species. Here, too, is a handsome climbing plant, covering an ornamental frame of woven wire. It is the *Physianthus albus*, clothed all over with delicate white blossoms. It is easily managed, by treating it like the dahlia, cutting down the stalk in October, housing the root through the winter, and planting out late in spring.

Passing to the north and west sides of the dwelling, we come upon fine collections of exotics, out for a summer airing. The large plants, in tubs ranged upon

the lawn, make quite an imposing show. That Pampas Grass, how it sends up its silvery spray! And here is a large oval bed, with a group of Canna Warszewicsii in the center, surrounded by a double row of Calla Æthiopica, the white blossoms of the latter contrasting finely with the dark foliage and scarlet flowers of the former. Beyond, is the French parterre, with its central fountain. But we can not pause to examine these many attractions in detail, as we would like, and so follow our guide to other portions of the grounds.

Stopping for a few moments' rest in the rustic summer-house, overlooking the lake, we next come to the terraced Italian garden. The suddenness and unexpectedness of this view give the stranger quite a start of pleasurable surprise From the shade of overhanging forest-trees you step at once upon an open lawn, and stand upon a parapet overhanging a valley and a beautiful sheet of water. The side of this valley below you, (which is almost crescent-shaped,) has been thrown into terraces, eight or ten feet wide, which are descended, at several points, by broad flights of steps. On either side of these steps, are curious specimens of the topiary art, after the old Dutch methods—Pines, Hemlocks, Spruce and Silver Firs, the English Maple and native Beech submitting to the shears very patiently. Mr. Harris, the intelligent head-gardener, tells us that it requires only two annual clippings to keep these trees in perfect subjection. Along the pillars of the parapet, and by the side of each flight of stairs, are set vases of Aloes and other architectural plants, and near the margin of each terrace are planted rows of Juniper and Yew, the light and dark foliage of the two contrasting finely. At the foot of the terraces, a neat, little semicircular grass-plot spreads out to the lake, where a pleasure-boat rides moored to the shore, ready for use. The whole scene, as viewed from above, is highly artistic.

Ascending the steps and following the carriage-way to the left, we soon enter a native wood, where, in occasional openings and partial clearings, are set many new and untried trees and plants in soil and exposure suited to their respective wants. Among these are some with curious foliage—gold-tipped, silver-striped, veined, spotted, and copper colored. Here, too, the newly imported conifers find a congenial home while being tested as to their hardiness. Of the latter we noted a few which struck us as particularly fine, such as: Pinus *Benthamiana*, *pinsapo*, *insignis*, *nobilis*, *pyrenaica*, and *Beardsleyi*; Picea *Webbiana*, *Pichta*, *Nordmaniana*, *nobilis* (beautiful bluish foliage,) *Cupressus Lawsoniana*, (fine); Abies *nobilis*, *Douglassii*, and *Smithiana* (good, but seemed to have suffered from frost;) *Chamæcyparis sphæroida*; *Thuiopsis borealis*; *Thuja Hoveyi*, (not imported, but finer than many "far-fetched and dear bought;") *Cephalotaxus Fortunii*; *Wellingtonia gigantea*, (somewhat scorched,) and many others. Along these half-shaded walks, and in this peaty soil, the Rhododendron, Kalmia, Azalea, and Holly flourish very well. Mr. Hunnewell, like Mr. Sargent, seems to be a "tree-taster" for American planters, and as such deserves the public gratitude.

Returning from this portion of the grounds—which would reward the study of several days—we approach the open lawn, and looking across it at its greatest length, observe several fine vistas or openings between groups and scattered trees. This lawn is, after all, the most impressive feature of the whole establishment. About eight acres in extent, evenly graded, the grass a bright green, fine and compact in texture, and neatly shorn and rolled, what could be asked more? The trees set here and there, singly and in groups, are well-chosen specimens of their several kinds.

Crossing now to the fruit and vegetable gardens, and graperies, we find every thing conducted on the same liberal scale. Not only pears and plums, but nectarines, peaches, Royal Muscadines and Black Hamburghs, seem as abundant as the apples of the farmer's orchard.

But the hour for the return train to the city approaches, and we reluctantly leave this beautiful residence, rejoicing that such ample means are controlled by such intelligence and such pure and elevated taste.

Not the least attraction among the gardens around the modern Athens, is the nursery establishment of the Messrs. Hovey, at Cambridge. The horse-railroad set us down within a few minutes' walk of the grounds, which cover several acres on opposite sides of the street. On the one side, are the famous avenues of pear trees, of which every horticultural reader has heard more or less, for the past fifteen years. Here are between 2,500 and 3,000 specimen trees, comprising every known and desirable variety, native and foreign. They were not all of them such perfect pyramids in form as we had expected to see, but they were remarkably healthy and productive. At the time of our visit, many of them were loaded with fruit; from others it had already been gathered and sold in Boston market.

And have you any secret method for raising pears so successfully? we asked one of the proprietors, as we walked among the bending trees. "None whatever," said he; "no methods besides those we openly teach, and which are well understood by all sensible horticulturists. Of course, occasional failures will happen, under the best management, but with good trees to start with, followed up by good culture, every body can raise pears, both standard and dwarf."

The fruit department being hastily glanced at, we passed on to the more ornamental portions. Such a display of Asters we never saw before, of almost every color and shade; some as large as dahlias, and nearly as double, others as small and as perfectly formed as the finest pompone chrysanthemum. It is no wonder that the Aster, in its many varieties, is becoming the most popular of fall blooming annuals.

Here we had our first satisfactory view of the new arbor vitæ, styled *Thuja Hoveyi*. It is an accidental seedling which sprang up in these grounds among a multitude of plants raised from seeds of the native arbor vitæ. The foliage is nearly or quite as delicate as that of *Thuja aurea;* it is laid in the same

flat plaits or folds, upright and compact together, and has the same golden tinge. While it is as dense and as hardy as the Siberian, it is much more refined and beautiful.

It pleased us to observe in these grounds the beginnings of a Pinetum, which, with the large facilities for obtaining trees at command of the proprietors, must soon become the repository of every conifer hardy in this climate.

Crossing to the other side of the street, and passing up a broad avenue swept by tall Norways and Hemlocks, we entered the lawn. This is not large, but is well made, skillfully planted, and admirably kept. A walk running in flowing lines near the boundaries—which latter, by the way, are concealed by hedges and shrubbery—gives one an opportunity to examine in detail many trees, shrubs, and plants of great beauty. Of these, we can now recall only the purple-leaved and Norway Maples, the Virgilea lutea, Fountain Willow, cut-leaved Oak, weeping Elms, fine Hemlocks and Junipers. Here, too, were some of the newer evergreens, such as *Cupressus Lawsoniana*, *Thuiopsis borealis*, *Pinus pyrenaica*, and several others. Here, also, were rare exotic plants in pots plunged to the rim, giving quite a luxuriant and tropical air to the place. But the lawn itself attracted our special admiration; so smooth, so soft, so elastic to the tread, it was a real luxury to walk upon it. And coming, as we had so recently done, from Mr. Hunnewell's magnificent expanses upon this little gem of perhaps half an acre, we admired it all the more. It was of such dimensions as almost every country gentleman of moderate means might reasonably devote to his lawn, and it showed how much beauty could be had in so small a compass.

Of the floral department we must speak briefly, our visit being quite short. Among the specialties, the Japan Lilies and Gladioli were quite noticeable. Of the former, there was a fine collection, not only of the old *rubrum*, *album*, and *speciosum*, but of six or eight seedlings produced here by hybridizing the Japan sorts with our native species. The result has been a lot of hardier plants, with handsomer foliage, and, in some instances, superior beauty of the flower. The one named *Melpomene* struck us as particularly fine. Of the newer Gladioli, the collection was large and very good: the flowers crimson, yellow, scarlet, white, pink, and of other shades and with curious markings. Here, too, were Rhododendrons and Azaleas, in vigorous health, the peaty and sandy soil of one part of the grounds being well adapted to their wants.

But we must close these rambling sketches, attempting only a glance at the more noticeable features of this establishment. The record we have made is as unsatisfactory to our own eye, as it will perhaps be to the polite proprietor who waited upon us.

[One word of thanks, Mr. Gridley, for your interesting and instructive sketch. We must express our regret, too, that a gentleman of such refined taste, and wielding such a polished pen, should not oftener employ it in the cause of Horticulture.—Ed.]

SEXES OF THE STRAWBERRY.

BY A. S. FULLER, BROOKLYN.

WITHIN the last few years there has been so much written about the sexes of the strawberry, that it may be thought superfluous to say any thing more upon this question. But there are certain cultivators (ourself among the number) who will not agree to any *finality* on this question, unless it agrees with our opinion of science and truth; and we hold that our opinion is as good as that of others, until facts are produced to prove that we are in the wrong.

Linnæus placed the Strawberry in the 11th class of his system, *Icosandria*, which class is founded upon the number and position of the stamens. Stamens more than ten and on calyx, pistils numerous, surrounded by the stamens; therefore the flowers are hermaphrodite or perfect, as they contain both male and female organs.

Now if we have read carefully, no botanist, from the time Vaillant commenced arranging plants in conformity with their organs of generation, down to the present time, has asserted that the Strawberry has been placed in a false position in botany. Neither has there ever been discovered a variety in its wild or normal condition, which did not possess both stamens and pistils, and both of these perfect in the same flower. Varieties have been found growing wild near where strawberries were cultivated that were wanting in some of their organs, but such are undoubtedly seedlings from cultivated varieties, which had been distributed by birds or animals.

According to the natural arrangement of botany, the Strawberry belongs to Rosaceæ or Rose family, in which are included the Apple, Plum, Peach, etc. Among each and every one of these we find sterile or barren varieties, which have been produced by cultivation. Some are sterile from one cause and some from another. Some have double flowers, the stamens having changed to petals; others produce no pistils, others no stamens, all of which are in a botanical sense deformities. Suppose a would-be botanist should assert that the double Rose, Plum, Peach, and Apple were natural, and endeavor to form a new class, separating them from the single wild varieties; would the true botanist be willing to allow him thus to encroach upon the field of truth? Far from it; neither will he admit that the pistillate, staminate, or any other monstrosity which may be produced by cultivation of these plants, be admitted into botany as natural flowers.

When the stamens are wanting in a variety, and pistils are present, it is called pistillate, and consequently sterile or barren, unless fertilized by pollen from some perfect flowering kind. But when a variety produces flowers containing stamens only, it is, as a matter of course, perfectly sterile, and no art of man can make it produce fruit. Some varieties produce both hermaphrodite or perfect flowers,

or pistillate or imperfect flowers, on the same plant, but the pistillate flowers are fertilized by the hermaphrodite, and then they both produce fruit.

In growing seedlings from pistillate sorts, we have found that not more than one in ten retained its pistillate character; and we have never been able to produce a pure staminate variety, although we have sometimes produced varieties that had stamens and pistils, both of which were undeveloped, and consequently barren.

When a variety has been produced either pistillate or hermaphrodite, it generally remains true; that is, no pistillate will change to a hermaphrodite, or *vice versa*. But sometimes a slight change may be produced by change of climate or cultivation, such as we often see in other plants, as the double rose becoming single or semi-double, etc.; so it is with the flowers of the Strawberry; for we have seen pure pistillate flowers on a plant that was under ordinary circumstances a hermaphrodite flower, and pistillate plants produce hermaphrodite flowers. This fact was proved by Thomas Meehan, of Philadelphia, a few years since, by fruiting the Hovey under glass without its being fertilized by any other variety.

We have never observed stamens in the Hovey, but we have in other varieties which are classed as pure pistillate varieties.

We can see no good reason why these changes should not take place, if the single Pink or Dahlia can be made double by successive generations of seedlings, and then, by a change of climate, soil, or a year or two of neglect, produce its single flowers again. Why should not the Strawberry, under like treatment, be made to change some of its characteristics?

We find nearly all of our cultivated fruits and flowers constantly producing sports and variations, and sometimes to these variations we are indebted for some of our most valuable varieties. It is here that we can find a solution for this Strawberry question; the cultivated varieties are not in their normal condition, but they are partly a creation of our own, and, as such, very liable to change.

Some fifty years ago, it was discovered, by Kean, in England, that some of his Strawberry plants produced flowers containing only pistils, and from that time down to the present pistillate varieties have been more or less in cultivation. Some cultivators have claimed that they were more productive than the hermaphrodite varieties. In some instances this seemed to be the fact; but to put this down as a rule would be fallacious, for we have observed that whenever pistillate varieties were wonderfully prolific, they were generally of small size, or not more than medium, while a large majority of our very large varieties are hermaphrodite.

Admitting that pistillate varieties were more productive than hermaphrodite in years past, the advent of the Wilson, Downer, and several others, completely explodes this pistillate theory; as they are perfect flowering, and yet more prolific than any known pistillate variety.

THE RAVENSWOOD PEAR.

(See Frontispiece.)

BY THE EDITOR.

We present for a *Frontispiece* this month a pear known around New York as the *Ravenswood*. It is a wilding, found some years since in the woods at Ravenswood. Its fine quality being discovered by a gentleman of that place, it was removed, and placed on the grounds of Mr. Erhard. It is a summer pear. Its size will be regarded by many as an objection; and it is to be regretted, on account of its excellence, that it is not larger; still there are many amateurs who prefer a small pear of fine quality to a larger one with no quality at all. Its earliness and excellence, we think, will entitle the Ravenswood to a place in the amateur's collection at least, being one of the best pears of its season. The form is obovate. Color greenish yellow, covered with small brown specks, and often with a red cheek. Stalk, short and thick. Calyx open, in a small shallow basin. Flesh, fine grained, melting, juicy, and high flavored. It is a vigorous grower, and very productive. It ripens the last of July and beginning of August. Our frontispiece conveys a very good idea of it.

FOX MEADOW FARM.

BY THE EDITOR.

We lately made a brief but long-projected visit to Fox Meadow Farm, the country seat of Charles Butler, Esq., whose hospitality it is always a pleasure to enjoy. The place itself is full of Revolutionary associations, having been "debatable ground." The meadow was overrun with foxes, and hence was called Fox Meadow, a name which Mr. Butler very properly retained when he purchased the estate, upward of 300 acres in extent, and embracing a remarkably fine inland view. No other place that we know of presents more striking evidences of the great value of underdraining. What is now the garden with its fruitful trees, and flowers, and graperies, was, at the time of Mr. Butler's purchase, only a few years since, an unsightly morass, covered with a tangled undergrowth, impassable to man or beast. Cattle sank to their girth on entering it. The change seems the work of magic; but the credit of it is due to John Ellis. Another spot, almost as bad, embracing some twenty acres, has about fifty thousand drain tile in it, and is now covered with as fine a piece of corn as we ever saw. This is also a thorough piece of work, and the only instrument Mr. Ellis used was the common carpenter's level, though he ought to have had something more.

There are about one hundred acres of fine woodland on the place, with a splendid undergrowth of Kalmias, Rhododendrons, &c. On the table land, just at the

entrance to the woods, there is a fine piece of water, with a beautiful cascade leaping down over the rocks and through the woods into Bronx River. This piece of water is susceptible of being made a grand feature of the place, and probably will be. In the middle of this pond somebody has built a square stone island. We do not know whether our good friend, Mr. Butler, had any thing to do with this, but he will excuse us for uttering the hope that an earthquake, or other potent cause, will some dark night tumble it to pieces.

Fox Meadow is of a rolling or hilly character, and possesses within itself a number of commanding views. Its natural features are very fine, and are capable of being worked up effectively. This is now being gradually done, and at no very distant day Fox Meadow will be a charming place. The graperies, however, constitute one of the great features of the place at present. They cover about a thousand feet of glass. They are used principally for forcing, there being only one small cold house. We have seen these houses several times before, but never, in their season, without a grand crop of grapes in them; and this year they seem better than ever. Mr. Ellis, we take pleasure in saying, ranks among the most skillful grape growers in this country; he who surpasses him does something to be proud of. Unlike a great many others, he has not done learning. Some experiments conducted during the past winter, embracing new features in grape growing, have been eminently successful; but we leave them for Mr. Ellis to tell himself. We may mention one fact, however, having a bearing on the influence of light and air. In one house, where the vines were crowded very close together, some of the intermediate ones were removed, thus admitting more light and a better circulation of air, as well as giving increased freedom to the roots; the result has been, that spurs that ripened only one bunch last year, have this year ripened two or three handsomely. Mr. Ellis's pride seems to be, not so much to grow a large bunch, as one that shall be thoroughly ripe, with a high color and thick bloom. That he grows large bunches, however, we know, for we saw a number weighing from two to five pounds each, which can only be produced by vines in the best condition. We saw also several splendid bunches of Muscats, weighing from three to five pounds each, thoroughly ripe and delicious, the berries looking like great drops of amber. There were also splendid Cannon Hall Muscats, not quite so large in the bunch, but much larger in the berry, and even more delicious. The vines were all healthy, making a vigorous growth, and carrying their wood and fruit to perfection. We know of no place where vines can be examined with more satisfaction than at Fox Meadow. Its genial hearted owner has much reason to be satisfied with every thing thus far done.

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

NEWBURGH VINEYARDS.—Enjoying recently the hospitality of Mr. Woodward, at Newburgh, we took occasion to examine a few of the vineyards for which Newburgh will soon become famous. Our time being very limited, we made the best use we could of it. Mr. Woodward has about two acres in vines, comprising the leading varieties, and all the new ones he could get. We have already published the results of the winter with him. Isabellas and Catawbas will give place to Delaware, Concord, and such other early ripening kinds as are better adapted to the climate of Newburgh. Mr. Woodward's vineyard is well located, and has had the advantage of good preparation. The growth is healthy and strong; and as Mr. Woodward reads the *Horticulturist*, we shall expect to hear a good report of these vines when they come into bearing. He has also a new grapery, in which every thing is going on in a most satisfactory manner, except that he neglects to use his thumb nail as promptly as he should. We suspect that will not be the case hereafter. We also saw here the Woodward grape, of which we shall speak hereafter. Putting up a fleet span of horses, Mr. Woodward's son drove us about to look at some other vineyards. The first was Mr. Cornell's, which covers about five acres. The vines are of full bearing age, but seem to have suffered much during the past winter. Mr. C., we believe, purposes working over his Isabellas and Catawbas. Mr. Cornell not being visible, our observations were made from the road-side, a vineyard being a place upon which even an old acquaintance should not trespass without the knowledge of the owner; in addition, we were afraid he would detain us too long if he saw us. The next vineyard we saw was Mr. Brown's. This is young, and planted with good kinds. With suitable culture and a good system of training this vineyard will in time produce good fruit. The next one belonged to a person whose name we forget. We were grieved to see that he has formed the opinion that grapes may be grown without culture, the whole being choked with grass and weeds. Let him at some leisure moment compare his vines with Mr. Woodward's, Mr. Mace's, or any

others that are cultivated, and he can not fail to see that he is making a very great mistake. There can be no greater absurdity than laying a vineyard down to grass, and those who are doing so will find that they are squandering their wealth. After a glance at two or three other small places, all young, we stopped, in the dusk of evening, at Captain Morton's, whose home is the old head-quarters of General Knox. The captain very politely showed us through the house, explaining every thing of historical interest, and told us how a grand ball was given there, attended by General Washington and his staff, besides all the belles of the place: all the girls seem to have been belles in those days, and some of them have left their names scratched on the windows to this day. A look at the old mill, granary, etc., in the dusky twilight completed our visit, and we drove back to Mr. Woodward's to enjoy a hearty supper, and after that some good music. The next morning, thanking our kind friends for their polite attentions, we started, in company with Mr. Woodward and his son, for our good old friend, Mr. Downing's, who, and his wife, are among the kindest people we know. We never visit Mr. D. without finding our horticultural enjoyment full and complete; he has always something new to show and something fresh to tell.

Having heard that Benj. H. Mace, Esq., had begun the formation of a Delaware vineyard, we made a brief call to see him, and were highly gratified with what we saw. Mr. Mace's situation is an elevated slope, facing a little south of east, but well protected on the north and west. The soil was thoroughly prepared. The vines are planted four feet apart in the rows, the last being six feet apart. Mr. Mace took occasion to say, that though a portion of his vineyard was prepared and planted before he saw our grape articles, he could not have followed our suggestions more precisely if he had had those articles before him from the beginning. While we felt complimented, we could not help thinking him a very sensible man. The vines are from one to four years old, and are in all respects in the very best condition, showing great vigor and health. The wood, in size, compared favorably with the Diana. The fruit surpassed any thing we have yet seen of the Delaware, the vines being literally loaded down. A great many bunches will weigh fully half a pound, and some more when ripe. The berries will come nearly up to the size of the Diana. This is the best beginning of a vineyard that we have yet seen. We expect to see it again in the fall, and speak of its matured results. We stopped to take another look into Mr. Downing's horticultural ark, where two of a kind are gathered together, that nothing be lost. What we saw here, new and old, could not be described in a volume. We next called on Mrs. Fay, widow of the well-known naturalist. She has a very beautiful and well-kept place. Our time was limited to a very few moments, and those we gave mostly to the vines. The vineyard is quite small, and planted chiefly with the Delaware. The other kinds had been badly winter killed, as was the case also every where else. We saw some very fine fruit on the Delawares, but the gardener does not seem to have fixed upon any system

of training, and the vines are making too much wood by half. The size of the canes on the oldest of these vines would satisfy, we think, the most unreasonable stickler for big wood. Thanking the ladies for their company, we next called upon our friend Mr. Skeele, who has an interesting little vineyard, planted with vines of various kinds. The whole vineyard is prepared like the border of a grapery, and the growth of wood is almost fabulous; in fact, the thing is overdone. To Mr. Skeele it is a source of inexhaustible gratification, and he is working out valuable results: we suspect, however, more for others than himself. Mr. Skeele's best show of fruit is on the Delaware and Union Village. We saw one bunch of Delaware with some of the berries as large as the Concord. With a mere glance at Mr. Skeele's fine lawn and beautiful shrubbery, we hurried on our way to the city, stopping for a moment at A. J. Downing's old place. It was a mere run over the boundary walk, dodging in here and there among the fine shrubbery, a peep into the well-kept grapery, a sharp glance at some very fine Delaware, Rebecca, and Concord vines in the garden, an upward look at some grand specimen tree, a rapid survey of the broad and beautiful lawn, a sidelong glance at the unique conservatory, interspersed all along with approving exclamations, chorused with Mr. Downing's "Come, you'll be too late;" then through the gate, into the carriage, and down to the boat just in time not to be left. Parting here with Mr. Downing and Mr. Woodward, we went on our way to the city.

The Caywood Apple.—We are indebted to Mr. Caywood for specimens of this apple. Its chief value consists in its late keeping, its season often extending to September.

A new Summer Apple.—We have received from Mr. Geo. Barry, of Alton, Ill., a box of apples in very good condition. He informs us that they were taken from trees fifteen or twenty years old, the only ones he has any knowledge of. They were purchased years ago of a Frenchman who owned a nursery in St. Louis. Mr. Barry adds: "The tree is very vigorous, forms a fine head, and is a moderate bearer, as far as I can learn, though some were quite full this season. It commences ripening about two weeks before the Early Harvest, (this year the 15th of June,) and lasts for a month or more. They usually sell for two or three dollars a bushel in St. Louis. It is a fine looking apple on the tree, covered with a heavy bloom, and good size. I picked about as small a specimen as I could find. Of the quality you can judge for yourself. Can you tell me what it is? We don't know out here." This is a large, handsome apple, sub-acid, with a pleasant flavor. We have never seen it before. We have sent specimens to Mr. Downing, who may be able to tell us something about it. As we have it before us, we can not class it "best," but "very good." Its size, handsome appearance, good quality and exceeding earliness, make it a very desirable fruit. Mr. Barry will please accept our thanks for his kindness.

Orchard-Houses of Col. Colt.—Being recently in Hartford, we made a brief visit to Col. Colt's. The leading feature here is the large extent of glass, there being, we should think, not less than 2,000 feet of it. A very considerable portion of this is devoted to orchard-house purposes, such as peaches, nectarines, apricots, cherries, pears, etc. Another portion is used as a pinery. The pines are chiefly queens, and most of them in fine condition. A few have apparently been kept too long in small pots, and are consequently a little brown, but are now recovering their vigor and color, and setting fruit. The fruit trees have been in the house only one year, but are in good condition, growing finely, many of them, especially the peaches, being well set with fruit. In the most forward house a very fine crop of peaches has already been gathered. Part of the trees are in pots and tubs, and part in the ground. The latter are large, well set with fruit, but we think in time will become troublesome. The yield of stone fruit in these houses will be very large. We were not a little disappointed in the small quantity of grapes grown here. The colonel, we conclude, has little taste for this luscious fruit. We have often seen twice the quantity grown with half the glass. The leading features are pines and stone-fruit, and these, Mr. Stubbins keeps in fine order; indeed, the whole place is very creditable to him. There are three pines which we should like to see when ripe. In the orchard-houses we saw tomatoes, corn, &c. The beans and tomatoes looked well, but the corn seemed to rebel against the confinement. Cucumbers are also grown here in great perfection. Between the wing of the dwelling-house is a very beautiful conservatory, regarded as a piece of architecture; but it seemed to us not so good as a plant-house. It contains a unique and beautiful fountain. The grounds about the house are kept in fine order, and are very attractive. There is a picturesque pond, well stocked with fish, and ornamented with a superb fountain. The deer park, with its inmates, is also an interesting object; but the most touching things we saw were the tombs of Mr. Colt's two children. Their position and treatment were very appropriate and impressive, and the fresh flowers daily placed there, spoke feelingly of the parents' love. Our visit was necessarily brief, but quite satisfactory.

The Aphis in a new Position.—While in Newburgh recently, our attention was arrested by the peculiar appearance of the Oats, which seemed to be very black. A close examination revealed the startling sight of millions of the brown Aphis, the plants being literally covered with them. On inquiry we learned that nothing of the kind had ever been seen before. Oats look bad enough, the straw being very short and the heads small. The drought has, no doubt, had something to do with this, but we think the Aphis has done its full share. At the ferry we met a person who had a large vial full, and who desired to know what they were. Mr. Downing then informed us that he had just returned from Connecticut, where he had seen the same thing, but without noticing what they were. The farmers, however, seemed a good deal alarmed, and we think with good reason; for if the

Aphis is to occupy in force this new field, there can be little doubt that the Oat crop will be reduced fully one-third. It is a matter which requires the farmer's serious consideration. The means used by the gardener for their destruction will have to be used by the farmer on a large scale. We should be glad to know in how many localities the Aphis has been thus seen.

Fruit in Michigan.—Mr. A. C. Hubbard, writing from Detroit, says: "The season was very wet, cold and backward, but we have had no rain for several weeks, and it is becoming very dry. There will be but very little fruit in this vicinity; no cherries, no peaches. Apples and peas blossomed freely, but a large proportion of the fruit has fallen prematurely; so there will be but little. In the western part of the state, upon Lake Michigan, fruit will be abundant. Very little of it, however, finds its way to this market, most of it goes to Chicago. There is a certain extent of territory upon the eastern border of Lake Michigan, which proves to be very favorable to fruit raising. Since this has been ascertained a large amount of land is being occupied for that purpose, and so far without a failure. This will prove of great value to the West, as fruit in most localities is uncertain."

A Strong Grapery.—Last fall we built a grapery for John Cheney, Esq., of South Manchester, Conn. It is situated in a valley, exposed to all the winds sweeping down it. The house is 20 by 70, with a continuous roof; and there is little timber in it, and that very light, the heaviest piece above the foundation being 2 by 6; but it is put together in a peculiar manner. This spring a fierce tornado came roaring down the valley, uprooting trees, prostrating dwellings, and performing other unseemly and fantastic feats; having no respect for graperies, it swept down upon this one in full force, *moving it bodily one foot from its foundation;* in the words of Mr. Cheney, "it all went together, *without breaking a pane of glass!*" It has since, with the aid of powerful jack screws, been moved back to its place without breaking a glass. Thus this large glass structure has been moved *two feet* without a breakage. A close examination has not revealed to us the least damage to or weakening of the timbers. Can a parallel case be found?

A Large Crop of Cherries.—Our friend Mr. Marié, who has some forty cherry trees, has sent us, as he says in his note, just one half of his entire crop of cherries, with an intimation that he will share the other half with us if we will go to Tubby Hook and dine with him. We have tried pretty hard, but by no kind of arithmetic known to us can we make more than *three* individual cherries out of our half; so we have concluded to back down on the dinner this time. It is a consolation, however, to have seen even so many as three cherries this season.

JOCELYN'S BLACK CAP RASPBERRIES.—Mr. Peck has sent us some of this improved Black Cap, with which we are much pleased. The berry is fully twice the size of the common Black Cap, is more fleshy, very productive, and has the full flavor peculiar to the wild plant. The fruit has brought a good price, and it may prove a valuable kind for market.

EXTRAORDINARY YIELD OF HONEY.—The following surpasses any thing of the kind which has come under our notice, but seems to be sufficiently vouched for. The *Journal of the California State Agricultural Society* says: "However surprising the statement of Mr. Hamilton, we can not doubt any thing which he says. We have known him intimately for about twenty years, and no man's veracity is freer of suspicion." Our readers will probable conclude, after reading Mr. Hamilton's statement, that California can raise "big" honey as well as big trees. The statement is as follows:

"Thirty-five swarms of bees did produce, during the past season, over twenty thousand pounds of honey. I am not surprised that the truth of this should be questioned, for I doubt if the world can furnish a parallel. Not that a hive producing 571 pounds in one season can not be found, but that thirty-five swarms should average that amount, is a great yield. But it is of no good to the public to tell them that a great thing was done, unless they are informed how it was done. This I will try to do in as few words as possible. About the 1st of February, 1860, I left the vicinity of Stockton with thirty-five swarms of bees—twenty-five swarms in Langstroth hives, containing about 1,400 cubic inches, and ten swarms in another movable-comb hive, containing about 2,000 cubic inches each. I took these bees to the town of Santa Clara, Santa Clara County, and I kept them there till the 1st of July, six months. I managed them on the system taught by the Rev. L. L. Langstroth in his work on the honey bee. I fed them on nothing except the honey that I took from them. By the 1st of July the swarms had increased to 270. I removed them, at that time, to the vicinity of Stockton, whence they started, and by the 1st of October the swarms had increased to 500. The large hives, ten in number, have increased to seventy-five, containing sixty pounds of honey each, or 4,500 pounds; the small hives, twenty-five in number, have amounted to 425, containing about thirty-five pounds each, or 14,875 pounds. From the small hives, in September, about 700 pounds were taken, and they afterwards filled 700 pounds; making for the whole the great total of 20,075 pounds. From the above it will be seen that the small hives have been much more profitable. Bees do but very little in Santa Clara after the 1st of July; but in San Joaquin and Sacramento Valleys they do the most after the 1st of July—July, August, September, and October being the best months of the year."—H. HAMILTON.

Correspondence.

MR. EDITOR,—I shall premise by saying, I have no practical knowledge of the management of green-houses. "If but one kind of plants were in a house, and the proper amount of heat were not exceeded, 'ventilation' would not be necessary." Page 275, June number.

Do not plants gather most of their ammonia and carbonic acid from the air. If, as I suppose, the ammonia and carbonic acid in the atmosphere will in a short time become exhausted, will not the house require a "change of air," to enable the plants to obtain their proper amount of these gases.

Do not all plants obtain a portion, perhaps the greater portion, of their nourishment from the atmosphere?

Persons in recommending the use of the wheat drill have said, "Wheat planted in rows is enabled to take advantage of the better circulation of air, thereby gathering more ammonia, which is stored in the plant as nitrogen."

Does your humble student understand you properly? Yours, etc.,

June, 1861, *Syracuse, N. Y.* VENTILATION.

[We are much pleased with your questions, and should be glad to have many more of the same kind. They show that, though you may have no practical knowledge, so called, of the management of green-houses, you have some conception of the organic forces which go to the formation of plants. Plants do take up ammonia and carbonic acid freely from the air; but in a green-house these elements will not soon become exhausted; indeed, they will never become exhausted under any ordinary good treatment of plants, though the house were shut up very much closer than we suggested. You seem to have an investigating mind. Go to a green-house, examine its structure, look at the soil the plants are growing in, and think of all the changes that are constantly going on in the soil, the plants, and the atmosphere; think, too, of the food daily supplied to the plants, and then let us know your conclusions. You will not find us backward in aiding you in your investigations. The increased fertility of drilled wheat is undoubtedly owing to the increased surface exposed to the air; sown broadcast and thick, the air can not circulate so freely among the stalks. If you look again at our remarks in the June number, you will find that we call for air in motion and plenty of room. These are essential for the full development of most plants.—ED.]

PETER B. MEAD, ESQ.: DEAR SIR,—The apparent pleasure with which you reply to the various inquiries of the readers of the HORTICULTURIST encourages me to ask information in reference to the best work—practical and theoretical—on Gardening; comprehensive, reliable, and recent. Loudon is regarded as good

authority, but his Encyclopedia contains many pages of little practical use in this country. Copeland, in his "Country Life," has collated a great mass of matter, but he runs a lightning train, and your foot barely touches the platform at a station before "all aboard," and off he flies to other and diverse themes: a rare jumble of real jewels and bits of poor brass. How about McIntosh's "Book of the Garden?" Is there a late edition of this work, and can you recommend it? Is there anything better?—where can I obtain it, and the price?

Please to direct me also where to find practical, *working* plans of Hot-houses, and the best method of heating them. Above the din of the Boiler war recently waged through the pages of the HORTICULTURIST, you urged the promise of a future adjustment of the vexed question. I am confident that my memory is not at fault, and so have been waiting to find the thing done in plan and section. I have Leuchar's "Hot-houses," and could scarcely say too much in its praise as a philosophical treatise on light, heat, and ventilation,—on the atmospheric and hygrometric phenomena of glass structures. But ten years have made many changes in the construction and interior arrangements of buildings of this kind. We would avail ourselves of the new if good—of the old if better. Pardon me; I trespass too far on your time, and can but beg your indulgence as of one long since made an acquaintance through the press, and regarded as a friend. Very sincerely yours,

R. M. L.

[The pleasure with which we answer correspondents is real as well as apparent; the only trouble is, that we get so many we know not which to answer first. To answer them all promptly is a physical impossibility. Nevertheless, send them along; we would not miss them for ten times the trouble they give us; for they often enable us to supply an item of information useful not alone to him who asks, but to a thousand others. Loudon is very useful to have at hand as a book of reference, but you want something different. Copeland does run a race with his readers, and generally outstrips them; but he leads them a pretty race. McIntosh is good, but costly. The price will not be less than $18. We do not know of a late edition. Thompson is also good, but likewise costly. It will probably cost you $8. These are both capital works. Among older works for practice, there are Bridgeman, Buist, and others, which will cost you but trifling sums, and may be read with profit. As to such a work as you want on the construction of Hot-houses, &c., there is none that we know of. There are two in preparation, one of which is by Mr. Ellis; but they will neither be published during these war times. No publisher will now even look at a manuscript. We would gladly give our articles on the "vexed question," and some others requiring illustration, but there is a difficulty in regard to the cuts which we can not well explain here. They will come yet in this or some other form. Thank you for your friendly allusions: we like to be brought into close sympathy with our parishioners.—ED.]

DEAR SIR:—Can you give us any aid upon a point perhaps new?

I have a stout Concord grape vine, almost six years old, upon an open trellis. This vine was entirely unhurt by the past winter, which killed six Isabella vines on the same trellis. On May 10th the swelling of its buds first became apparent. On that day, or the next, I observed a small greenish black beetle, about half the size of a lady-bug, upon every bud. They remained eleven days, and then every one disappeared. I did not attend particularly to their operations until two or three days after their disappearance, when I found that every bud was pierced through by a little blackened hole, as if by a hot wire. Some of the buds were turned almost inside out.

The vine has not sprouted yet, (June 3d,) though other vines, not troubled by the beetle, have grown three inches. I never saw the insect before. Can you give its name and habits? LABRUSCA.

New Bedford, June 3, 1861.

P. S., June 7th. The Concord is now thrusting out secondary buds—little watery things, intended for 1862; but it is of course three or four weeks behind time. I suppose the wood of this year will not ripen well, so next year the whole vine will be backward, and perhaps not ripen at crop. May not this explain what old gardeners say is a fact, that the Isabella grape ripens later than formerly?

[The insect referred to is the chalybia, and is a great pest. In some localities about here, where it did a good deal of mischief some six years ago, it is now quite unknown. It seems to be of a migratory habit. As many as possible should be killed with the thumb and finger. Their depredations may be prevented to some extent by syringing with a decoction of whale oil soap and lime, which must be several times repeated. The Gishurst Compound we should think would also be good. You may have some trouble in ripening the shoots from your secondary buds. Assist them as much as possible by pinching in the laterals to a single leaf, and in September pinch out the ends of all the shoots. You may in this way ripen your wood, but it will not be as strong as the wood from primary buds, and will not next year produce as much or as large fruit.—ED.]

MR. MEAD, DEAR SIR,—Please tell us in your next number the very best way to cover Strawberry beds in winter. Leaves blow off with me, and tan bark, while it is a good winter covering, keeps the plants back late in the spring, and brings in grubs in summer. Respectfully yours, A. D. G.

[It is a pity the leaves blow off, for they are a most excellent covering. A little light brush, or a few corn stalks, would prevent this. Long straw or salt hay makes a very good covering, not much liable to be blown off by the wind. Scatter it all over the plants, but not thick.—ED.]

PETER B. MEAD, ESQ.: I wish to give a few thoughts about the curculio. They may be very erroneous, and show that I am not an "insect man;" nevertheless, take them for what they are worth, and let them pass.

1. The curculio worm winters in the tree.

2. There are two generations of them during one season.

S. showed me last January, while we were looking over the fruit buds on the pear trees, close down to the base of the bud, looking *very* sharp, a little web, the same color as the wood. On opening this web the regular curculio worm was found, in dozens of instances, only about half the size we find him in the spring. We will start with him here at the base of the fruit and leaf buds, and as spring opens and the leaf commences to grow, the worm comes out and begins to feed. It feeds on the leaf a few weeks, then wraps itself in a leaf it has destroyed, (of which you will notice a plenty on the tree at this time,) and drops to the ground, into which it works its way, and comes out the perfect curculio, in season to sting the young fruit and deposit its egg. Then, in turn, this fruit drops to the ground with the live worm that came from the egg in the fruit; the worm enters the ground, and in a week or two comes forth the curculio again, which deposits its eggs this time at the base of the next year's buds, which hatch before the cold weather sets in, and it builds for itself a web impervious to water, and a sure protection through the winter season, unless the point of the penknife brings him out. Thus you see he is all ready, if not molested, to commence work in the spring; and through changing and perpetuating makes his yearly rounds.

Mr. Mead, if it is not the curculio worm that we find in winter on the tree, can you tell us what it is?

P. S. Did that grub I sent you last week get there alive? They have made bad work with my vines. Shoots four inches long on my Rebecca and Diana vines, they have eaten off with a clean cut. What kind of treatment would you give them? I mean those that I can't get between the thumb and finger of my rubber glove. Do you know any thing of their habits? How do they spend the winter?

Very truly, RUFUS CONANT, JR.

[Your curculio theory is an ingenious one, but our observations, we are sorry to say, compel us to dissent from both your propositions. We have kept the curculio in numbers during the whole year, and have demonstrated, to our own satisfaction at least, that it passes the winter in the perfect or imago state. We have failed to discover more than one generation during the year, though we have watched them with special reference to this very point. If you should hatch out the "worms" found on your pear trees, you would find them not to be the curculio. As you seem to feel an interest in such matters, we suggest that you do so.

The grub sent came to hand alive, and is the larva of a moth. It is very destructive, not only to the young shoots, but also to the fruit, eating through the footstalk, so that the whole bunch drops. They spend the winter in the ground.

The thumb and finger of your rubber glove are a sure remedy, but very tedious. Air-slaked lime dusted over the vines, whale oil soap, Gishurst compound, &c., will help you very materially, but the application must be repeated several times. "Eternal vigilance is the price of freedom" from insect enemies.—Ed.]

Mr. Peter B. Mead:—I was much pleased with the manner in which some questions of Mr. Geo. H. Goodwin, in your January number, were asked and answered. They were most of them questions that I have wanted to ask myself; but I could not help wishing that the first question had been in this form: "Are trees which come from the nursery with a few large, long roots, better than those with *a few* fibrous roots?" for we must all agree that a tree with *many* roots is better than one with only a *few*, let them be of whatever character they may. Mr. L. E. Berckmans has, I believe, expressed the opinion somewhere in the Horticulturist, that fibrous roots to a newly planted tree are of doubtful value. I do not endorse this, but I am fully convinced that the first and most important requisite for a young tree is, that it shall be furnished on all sides with a sufficient number of strong brace-roots to keep it in its place, and protected from being swayed about by winds and storms; after this more fibrous roots the better, provided they are not so numerous as to get matted or entangled together, so as to prevent their being kept in their original position. In that case I should cut them away, unless the circumstances would permit the removal of the earth with the roots. A tree without some fibrous roots that may be taken up with it, is certainly not worth much, but may sometimes be made a good tree by severe shortening in both the top and roots, and being planted in soil favorable to the production of roots. And this brings me to the question that I want to ask. Why will some soils produce more roots in proportion to the size of the tree, than other soils? A fact or two will not be out of place here, I think. Two years ago, I purchased some Norway Spruce that were grown upon light, sandy soil. They were from one to two feet high, had made a good growth the previous year, and, I supposed, were every way good trees; but on taking them up I found they had roots more like standard pear-trees than any thing else I can think of. They were almost destitute of fibrous roots. I planted part in the fall, and they nearly all died; the rest in spring, and they nearly all lived. They made a growth the summer following of three to six inches, and when planting time came again you might take a spade and go to any one of them, and cut down the length of it around the tree, say eighteen inches from it, and lift it out without losing off a pound of the soil; the roots were so woven together—so to speak—through the whole of it. I think trees on the sandy soils along our lake shore, have fully one-third less root that those grown on the heavier soils more in the interior of the State. I refer to nursery trees generally. There is also a difference in varieties in this respect in the same ground. In root-grafted apple-trees the difference is a very marked one; and the Rambo and Swaar may be taken as

an example of those with least roots, while Bough and Golden Sweetings are among the best-rooted. If you will explain these things to me you will do me a great favor. Yours truly, GEO. W. DEAN.

Welshfield, Geauga County, O.

[The above very suggestive letter was mislaid, or it would have appeared sooner. In regard to the form in which you put the question, we would remark, that a tree with a *few* roots of either kind is a most undesirable thing, and there is not much choice between them. If planted in a suitable soil, nature will at once begin to form roots, for feeding or for support, as the one or the other may be most needed. A good nurseryman should never send out a tree deficient in fibrous roots; for where these are duly present, there is never a lack of the other. In the case of the vine, there are two quite distinct methods of making "layers," the one producing scarcely any thing but long roots, and the other a good system of fibres; and it was between these we supposed Mr. Goodwin wished to choose, and we advised him accordingly. We have no knowledge of Mr. Berckmans having expressed the opinion you allude to; but of this we are convinced, that no tree can have a better support than that furnished by a good system of fibrous roots, which furnish a multitude of points of resistance. Such a tree will seldom require a stake, except in a very exposed place; indeed, a stake is very often a palpable evidence of either bad planting or a bad plant, except as noted above.—Next, some soils produce more roots than others, simply because they are richer in carbonaceous matter. If you had planted a part of your Norway Spruces early in September, you would have lost as few as you did in the spring, and have had the same growth and masses of roots. Your case is an additional evidence that something more is needed than long roots for mechanical support. There is undoubtedly a difference between varieties of apple and other trees in regard to the quantity of roots they make, dependant chiefly upon their native vigor. In respect to root-grafted apples, the piece of root upon which they are grafted gradually dies, the graft throws out roots, and the tree is ultimately in the condition of one made from a cutting, dependant altogether upon its own system of roots: these roots will vary mainly according to the aptitude of each particular kind for this mode of propagation, though other and local causes may sometimes coöperate to produce the same results. This explanation, we think, sufficiently accounts for all your phenomena. If not, let us know wherein.—ED.]

MR. EDITOR,—DEAR SIR,—Since you seem to take so much pleasure in answering the questions of the ladies, I will venture to ask two: 1st. Which is the best Strawberry for the garden? 2d. Which is the best Grape? I have only a small place, and think one kind of each is enough for me to grow, but I want the best. Will you please answer these questions for me? Respectfully yours,

Mount Vernon, July 20th, 1861. ANN S.

[You are short and sweet, Ann—we mean the letter, of course. We are always

ready to answer the questions of the ladies, provided they are not *two* personal. We don't exactly know what might happen in that case. The best Strawberry for the garden is Triomphe de Gand. The best Grape is the Delaware. You do wisely in not planting many kinds, if your place is small; but we suspect you will want more by-and-by.—Ed.]

BROOKLYN HORTICULTURAL SOCIETY.

The following Address was delivered by President Degrauw at the First Conversational Meeting:

Gentlemen of the Horticultural Society:—We have assembled this evening to discuss the subject announced at our last regular meeting, "Horticulture and its Influences." I feel most forcibly the truth of my inability to enter on the highway of a subject so vast and unbounded, but I have no doubt that there are others present that will take a part in the proceedings of this evening, and give you the enlightenment that it has been my misfortune to fail in accomplishing.

We have a high sanction for the subject which we have assembled to discuss. When the Beneficent first chose a scene to occupy our intellectual and moral faculties, "planted a garden eastward of Eden," "He there" put the man whom he had formed, and when Earth and "all which it inherit" shall have passed away within the precincts of a future world, the family of man shall partake of joys that are depicted under the alluring imagery of a garden. Refreshing bowers and luxuriant verdure, a pure crystal stream, sweet fragrance and delicious fruits were man's first blessedness, and are the graphic emblems of that final bliss which is reserved for him. It was a Paradise that we have lost; we are to regain a Paradise; while we yield to the emotions that our subject suggests, we may be enlivened, therefore, by this interesting thought—We are engaged in the promotion of an object suited to man's highest earthly destinies.

It is calculated to afford the intellect abundant themes, to which a patriarch's long life might with unceasing gladness be devoted; for it extends above, beneath, around us, rare beauties that are without limit, and varieties without end; it is replete with the animating pleasures of discovery and the calm delights of contemplation. It is calculated also to affect us by yet higher and more wholesome influences, for it can act upon the heart with a benignity that has power to allay the angry passions of the breast, it can promote our peace on earth, and it can fill us with pure sentiments and holy breathings.

Let us, then, exult this evening in these attributes of our subject; first, we have said that it was calculated to engage the intellect. There is no human science that is more ample in its range, or more attractive in its multiplied allurements; it unfolds to the astonished view a living landscape—the wide world—and its votary is pointed to the eastern and western hemisphere, it leads him, in full vision of the extended scenery to look abroad; it then invites his contemplation to the bold draft that marks its outline.

In all that may appear so wild and scattered in these multitudes that teem throughout the vegetable kingdom, it discerns an exquisite gradation,

> "From the proud wood whose head the sky assails,
> To the low violet that loves the dale."

And it disposes all, with a regard to that established order, which is proclaimed by their peculiar characteristics; with a philosophic eye it dwells upon the parts of which they are composed, and it again developes every where the rudiments of heaven's first law. It views the external forms which plants exhibit, and sees them to be well ordered both for nourishment and reproduction. It names, it classifies, and it describes the gifts of Flora. Within the bounds of four and twenty classes, it brings no less a multitude than thirty thousand species. It beholds their internal organization, it explains the physiology of plants, it sees them pass through their successive states, from their incipient existence to the period when they have attained maturity, and sent again into their native dust. Their numerous causes of diseases are also carefully detected; the favorite places of their habitation are distinctly marked, and whatever are connected with the peculiar traits which they assume, is made a theme of accurate and laborious investigation. The details resulting from this scrutiny abound in interesting facts.

But it is the province of our subject to indulge a range yet wider. It investigates the geographical distinction of the vegetable families, in which it every where discovers a variety the most pleasing, vegetated by the established general principles. It explores the surface of the globe, with regard to its various qualities of soil and earth, and here, geology and chemistry, its handmaids, decorate it with new charms. It is concerned also to improve and renovate the earth by fertilising agents, and the vegetable animals and mineral kingdoms here conspire in its cause.

With an admirable ingenuity excited by its needs and its emergencies, from age to age it has contrived implements, machines and other articles of mechanism. In the history of these is comprehended much to entertain and discipline the mind.

With parental care, it rears appropriate structures for the nourishment, security and preservation of its household. It erects large edifices, both for use and ornament, and it disposes all with a regard to the just principles of taste. Its gardens thus are landscapes, where the useful and agreeable, as lights and shades in the chiaro-oscuro, charm the eye.

These lovely scenes are the abodes of the amiable genius of Horticulture. She ranges the wide world with an indefatigable assiduity. She gathers, and transfers, and nationalizes, and adapts to our use whatever can regale the senses. And it is her enviable occupation "to dress and keep" what she has thus gathered and arranged. A boundless theme is here presented—it is the application of her art. It is to sow and plant, to prune, to train, and to transplant, to propagate by

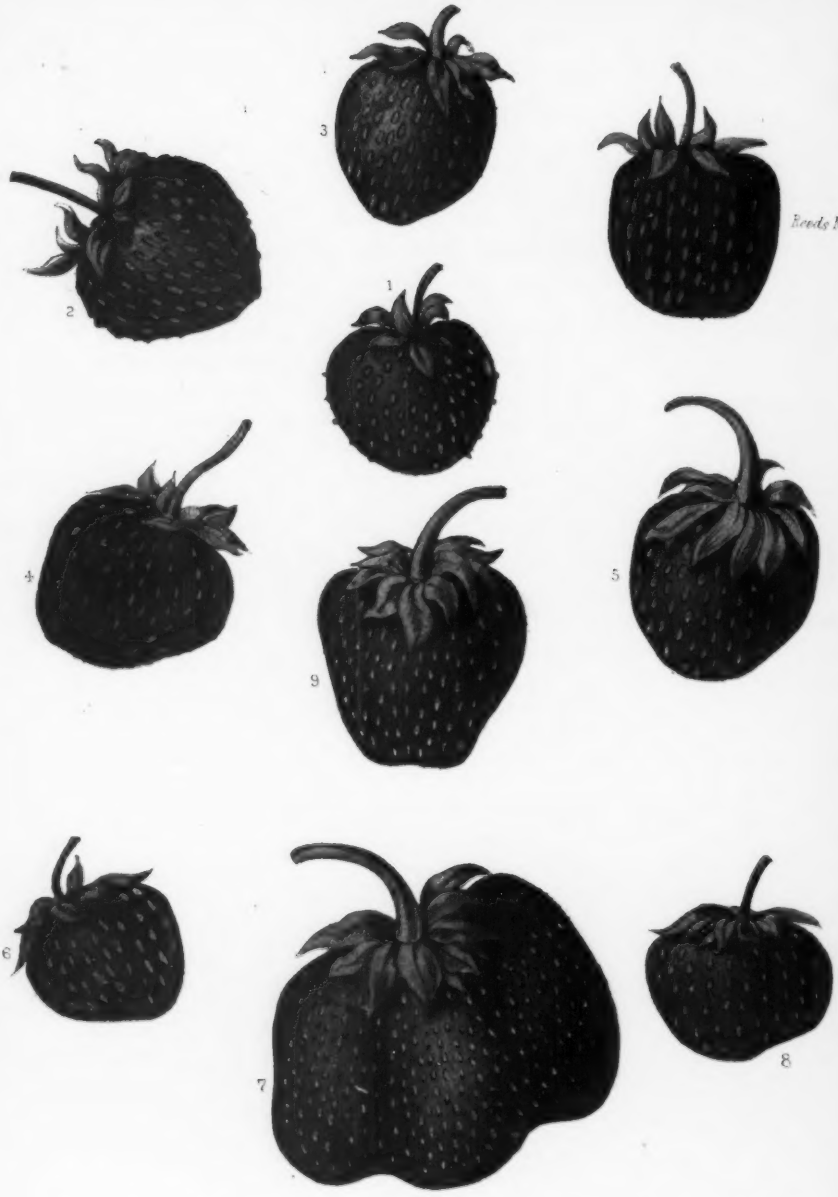
grafting, cutting, budding, layering and inarching. And connected with these operations are remarkable phenomena that lead the mind to pleasing and elevating thoughts, for it may thus dwell on many of the most interesting pages in the book of nature.

Both as a science and as an art, if it be properly appreciated, Horticulture is abundant in resources. It has occupied the meditation of the learned in all countries and all periods of the world, as is demonstrated by its literature. Within its gardens are inscribed the names of Hesiod and Homer, Aristotle, Xenophon and Aurelian, Cato, Vano and Palladius, Martial and Horace, wandered there. Beneath its shades and in its cool retreats, a Virgil could compose his Eclogues. Dioscorides and Pliny, too, and Columella, lingered in its fragrant walks. All these commend the fascinations both of Flora and Pomona. To their shrine each realm of Europe has sent multitudes of votaries. From Britain the ingenious Bacon, and the philosophic Evelyn, and the poetic Cowley, mingled in the throng, and in their train were Milton, Addison and Pope, Thompson, Shenstone, Cowper, Mason, Walpole, Davison, and the illustrious Sir Joseph Banks; and from the Continent, amid a bright array of learning and genius, we may recognize a Buffon, a Dulille, and a Saint Pierre in France; in Germany, a Hirschfeldt and a Herder; in Switzerland, Conrad Von Gessner, and in Sweden, the renowned Von Linne. Such famed scholars and historians, poets, statesmen and philosophers, commend our subject by the various contributions with which they have themselves adorned it. To dwell in contemplation on those spots, which by their presence they have consecrated, gratifies the generous mind. And other pleasing themes await the votary of Horticulture. With a retrospective view, he may recur to its ancient history and be refreshed by its alluring visions as they pass successively before him. He now sees man's first place of bliss,

> ——— "planted with the trees of God,
> Delectable, both to behold and taste."

Now the gardens of the Hesperian nymphs, with every classical embellishment, attract his eye. He sees the Babylonian terraces, which, by the magnificence of art and the luxuriance of nature, formed a wonder of the world. The pleasure grounds of Solomon, described in Scripture, and the gardens of Laertis and Alcorius, which Homer has immortalized; the far-famed Sardian retreats, which Cyrus cultivated; the Panchean paradise and the Orontran grove, here rise in their enchantment. Then appear the celebrated vale of Tempe, and the Academus and the Lyceum, each associating nature in her loveliness with philosophy in all its pride. The splendid works of ancient Roman sumptuousness are seen displayed by a Lucullus and a Hortensius, and to those villas that extend round the Imperial City.

[*To be continued.*]



N°1. Prince's Imperial Scarlet.
2. Jesse Read.
3. Ladies Pine.

N°4. Read's Black Pine.
5. Delice D'Automne.
6. Haarlem Orange.

N°7. Kitley's Goliath.
8. Mr. Avoy's Extra.
9. Compte de Flandre.

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